



US-Korea Conference 2017

Korean-American Scientists and Engineers Association

UKC2017

**ENGAGEMENT OPPORTUNITIES
FOR GLOBAL CHALLENGE**



WASHINGTON D.C
AUGUST 9–12, 2017
HYATT REGENCY CRYSTAL CITY

Engagement Opportunities for Global Challenges: “CONVERGENCE and INNOVATION through COOPERATION”

The US-KOREA Conference on Science, Technology and Entrepreneurship (UKC) will be held August 9 – 12, 2017 in the Hyatt Regency Crystal City near Washington DC, Capitol of the United States.

Building on the strength of having numerous National Laboratories, Government Agencies, Universities and industries in the region, e.g., NIH, NASA, NIST, FDA, etc., UKC2017 provides valuable opportunities for cooperation between the US and Korea.

The program includes symposiums, forums and workshops to cover broad areas of science and technology, including but not limited to basic science, applied science, engineering, technology, entrepreneurship and science policy. It also offers laboratory tours, e.g., NASA, NIH, George Washington University, Johns Hopkins, University of Maryland, etc.

US-Korea Conference (UKC)

UKC provides an environment where convergence and innovation can be ignited and implemented. It can play a major role in the Creative Economy that requires interdisciplinary integration.

UKC can play a major role in reducing the technology gap with policy makers, and build the framework to tackle global challenges through science diplomacy.

UKC fosters peer networking and mentoring, and provides a platform for current and future leaders to meet in an environment where meaningful partnerships and friendships can form and grow.

UKC Communicates Science and Technology with the public, and cultivates Science, Technology, Engineering and Math (STEM) education to empower future generations.

UKC 2018 New York



Korean-American Scientists and Engineers Association (KSEA)

UKC 2017



US-Korea Conference (UKC 2017) On Science, Technology, and Entrepreneurship

<http://ukc.ksea.org/UKC2017/>

Co-Organized with
The Korean Federation of Science & Technology Societies (KOFST)
and
The Korea-US Science Cooperation Center (KUSCO)

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UKC 2017 Chair & KSEA 46th President
Myung-Ja Kim (KOFST President)
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MESSAGE FROM UKC 2017 CHAIR



Dr. Eun-Suk Seo
President of KSEA

Professor
University of Maryland

Dear Distinguished Guests and Participants,

It is my great pleasure to welcome you to the 2017 US-Korea Conference on Science, Technology and Entrepreneurship (UKC 2017), jointly organized by the Korean-American Scientists and Engineers Association (KSEA), the Korean Federation of Science and Technology Societies (KOFST) and the Korea-U.S. Science Cooperation Center (KUSCO).

We are living in a rapidly changing world. Digital interconnectivity across virtual, physical, and biological borders and across various sectors of society is already challenging our conventional practices. A fusion of technologies is blurring traditional boundaries. Whether it should be called the 4th Industrial Revolution or not, it is timely for the UKC to offer Engagement Opportunities for Global Challenges with a theme “Convergence and Innovation through Cooperation” focusing on UKC’s special multi-disciplinary nature. Naturally, various aspects of artificial intelligence, big data, and smart things etc. will be discussed broadly at this conference.

Building on the strength of having numerous National Laboratories, Government Agencies, Universities and industries near the venue, UKC 2017 provides special opportunities for cooperation between the US and Korea. For example, there will be a Bio Economy Forum, where Food and Drug Administration, biomedical researchers and pharmaceutical companies will get together to discuss Drug Development and Approval. There will also be a forum on fine dust air pollution, a burning issue that requires not only technical but also regulatory discussions. UKC offers an opportunity for scientists and engineers to interact with policy makers so that strategies and policies can be developed as issues and challenges are addressed. It is our hope to reduce the technology gap with policy makers, and build the framework to tackle global challenges through science diplomacy.

The conference program includes symposiums, forums and workshops to cover broad areas of science and technology, including but not limited to basic science, applied science, engineering, entrepreneurship and science policy. UKC 2017 boasts prominent speakers including Nobel Laureate John Mather of NASA, and Cherry Murray, Benjamin Peirce Professor of Technology and Public Policy at Harvard University, who recently served as the Director of the Department of Energy’s Office of Science.

In addition, UKC 2017 fosters peer networking and mentoring. With a goal to empower and develop future generation leaders, UKC 2017 offers a public lecture by Nobel Laureate John Mather, and Young Student Science and Technical Leadership Camp, as well as Young Generation and Professional Forum.

I would like to express our thanks to Organizing Committees and volunteers for their tireless efforts, and to sponsors for their generous support. We hope that UKC 2017 will be a rewarding and memorable experience for each of you. We also hope and trust that you will enjoy your visit to the very beautiful and exciting city of Washington DC and its vicinity.

Eun-Suk Seo
UKC 2017 Chair and KSEA 46th President
Professor of Physics, University of Maryland, USA

MESSAGE FROM UKC2017 CO-CHAIR



Dr. Myung-Ja Kim

President of the Korea Federation of
Science & Technology Societies (KOFST)

Distinguished Guests and Ladies and Gentlemen!

I would like to warmly welcome scientists and engineers from home and abroad for joining '2017 US-Korea Conference on Science, Technology and Entrepreneurship' organized by the Korean-American Scientists and Engineers Association(KSEA) and co-hosted by the Korean Federation of Science and Technology Societies(KOFST) and the Korea-U.S. Science Cooperation Center(K-USCO).

Today's conference which is being held under the theme of "Engagement Opportunities for Global Challenges: Convergence and Innovation through Cooperation" will discuss convergence technology, innovation and cooperation as new growth engines for the future.

We are already witnessing the advent of new era called the fourth industrial revolution driven by convergence technology such as Artificial Intelligence(AI), drones, robots and Internet of Things(IoT). In a survey conducted by KOFST last May, out of 2,350 people surveyed, 89% of the respondents replied that "the fourth industrial revolution is already taking place." Truly, the fourth industrial revolution is 'a future that is already here' with us.

The International Data Corporation(IDC) forecasts that by 2020, 4 billion people across the globe will be interconnected, and enterprises will find an opportunity to explore new markets worth 4 trillion dollars. On the other hand, Gartner has presented a worrisome outlook that losing jobs to technology will trigger social unrest going forward.

The pace of technological evolution is faster than we have ever expected, and the traditional linear model of innovation is no longer workable. Revolutionary technology is now reshaping industrial structure and fundamentally changing the ways of working, jobs and even life in a way that we have never seen before.

To ensure that people make the most of the double-edged sword of technological convergence and advancement, we need to adopt an integrated approach and inclusive innovation that increase social and cultural receptivity, instead of a sole economic approach.

Last month, KOFST held discussions with scientists and engineers on the subject of 'the Era of the Fourth Industrial Revolution: Inclusive Growth and Innovation' to have an in-depth discussion in this regard. And we were able to reaffirm that inclusive values such as improving quality of lives, addressing inequality and protecting the vulnerable should be accompanied by technological advances.

I expect that the UKC that marks its 20th anniversary this year will be a meaningful venue to share profound insights and ideas on science and technology along with humanity.

Last but not least, I would like to convey my special thanks to President Eun-Suk Seo and the dedicated staff of KSEA for successfully organizing this wonderful event.

I wish you all the best and happiness in your future endeavors.
Thank you.

Myung-Ja Kim
President of The Korean Federation of Science and Technology Societies

MESSAGE FROM KUSCO/NRF PRESIDENT



Dr. Moo Je Cho

President
Korea-U.S. Science Cooperation Center
National Research Foundation of Korea

Dear Distinguished Guests, Ladies and Gentlemen!

It is my great honor and pleasure to welcome you all to this memorable event joined by world-renowned scientists, engineers, professors, industry experts, academic entrepreneurs and policy makers from both the US and Korea.

This year, “2017 US-Korea Conference” is very special to me because the National Research Foundation of Korea has been 40 years since the establishment. You may know that the cooperation between scientists and engineers from both sides was indispensable during last 40 years.

Since 2003, we have sought to advance our relationship into more strategic, progressive, and cooperative partnership through the US-Korea Conference in direct response to the emergence of the knowledge-based society of the 21st century.

UKC 2017 will provide unique opportunities of interdisciplinary integrations between academic, industrial and policy arenas to provide best strategies and policies to tackle global challenges. Furthermore, the conference aims at generating an environment where partnerships and friendships prevail for current and future generation leaders.

I hope that the 2017 US-Korea Conference will serve as a great opportunity to lively exchange and share valuable ideas for US-Korea cooperation, and will make significant contributions towards building a better life and a better future for mankind.

At UKC 2017, I ask you to share your valuable expertise and insight with industry leading scientists, engineers, and companies from the US and Korea. Your attendance and participation will make this conference more meaningful.

I would also like to express my sincere appreciation to staff members from both countries for their hard work in putting this conference together.

Thank you again for participating in UKC 2017.

Moo Je Cho
President
Korea-U.S. Science Cooperation Center
National Research Foundation of Korea

MESSAGE FROM UKC 2017 PROGRAM CHAIR

Welcome to UKC 2017!



Dr. Byungkyu Brian Park
UKC 2017 Program Chair

Associate Professor
University of Virginia

On behalf of UKC 2017 Program Committee, we are honored and pleased to present our conference program consisted of 3 plenary sessions, 12 Symposiums, 20 forums and a workshop. We are so grateful to symposium chairs and co-chairs, session chairs and forum chairs who dedicated their time and efforts and worked relentlessly recruiting prominent invited speakers and soliciting papers from diverse groups including academia, industry and government from the United States and Korea.

This year, we are excited about several new initiatives. Firstly, we developed a total of 17 interdisciplinary sessions in which presenters from two or more disciplines will jointly discuss engagement opportunities for global challenges and seek convergence and innovation through collaboration. Secondly, we provided each poster presenter with a showcasing opportunity of their research via speed talk in which should inspire more engaged discussion among interested participants at the poster session. Thirdly, our forums are prepared to address most significant challenges (e.g., fine particulate matter) and most urgent needs (e.g., preparing for 4th industrial revolution). Finally, on top of many prominent speakers including Nobel Laureate Dr. John Mather, our plenary included a panel session on leaders in healthcare with exemplary Korean-American rising stars representing government, academia and industry.

In addition to these sessions, UKC 2017 includes over 30 booths from sponsors where participants can explore various opportunities including internship, job interview, and research project collaboration. We hope our distinguished guests, presenters and other participants enjoy the conference venue, Hyatt Regency Crystal City, and the Capital of the United States throughout the UKC 2017. Again, we welcome all of you to Washington DC area, and look forward to having a successful conference.

Byungkyu Brian Park, Ph.D.
Program Chair and Associate Professor at University of Virginia

Young-Kee Kim, Ph.D.
Program Co-Chair and Professor at University of Chicago



Dr. Young-Kee Kim
UKC 2017 Program Co-Chair

Professor
University of Chicago

From the Big Bang to the end of the universe, and how we'll learn more with the James Webb Space Telescope

10AM August 10, Thursday @ Ballroom C - F



**NOBEL LAUREATE,
DR. JOHN C. MATHER**

Senior Astrophysicist and Senior Project Scientist for the James Webb Space Telescope at NASA's Goddard Space Flight Center

The James Webb Space Telescope, planned for launch in October 2018, will be the most powerful space telescope ever built. It will open new territories of astronomy, with observations ranging from the first stars, galaxies, and black holes, to the growth of galaxies, to the formation of stars and planetary systems, to the evolution of planetary systems and the conditions for life here on Earth, and perhaps elsewhere. I will show how we have learned about the history of the universe, how the Big Bang is a completely misleading name for the infinite expanding universe, and what new telescopes are being built now. I will illustrate with simulations of the formation of galaxies from the primordial material, and the possible evolution of the solar system through planetary orbit migration. The JWST telescope mirror has been assembled and the instrument module has been completely tested. After more tests at Goddard, the telescope/instrument combination will travel to Houston for cryo-vacuum tests in Chamber A in 2017. I will show the design of the observatory and discuss the opportunities for future observers to prepare to use it.

Biography

Dr. John C. Mather is a Senior Astrophysicist and is the Senior Project Scientist for the James Webb Space Telescope at NASA's Goddard Space Flight Center in Greenbelt, MD. His research centers on infrared astronomy and cosmology. As an NRC postdoctoral fellow at NASA's Goddard Institute for Space Studies (New York City), he led the proposal efforts for the Cosmic Background Explorer (74-76), and came to GSFC to be the Study Scientist (76-88), Project Scientist (88-98), and the Principal Investigator for the Far IR Absolute Spectrophotometer (FIRAS) on COBE. With the COBE team, he showed that the cosmic microwave background radiation has a blackbody spectrum within 50 parts per million, confirming the expanding universe model (aka the Big Bang Theory) to extraordinary accuracy, and initiating the study of cosmology as a precision science. The COBE team also made the first map of the hot and cold spots in the background radiation (anisotropy), now attributed to quantum fluctuations in an inflationary period in the first 10-36 sec of the universe. These spots represent density fluctuations that are responsible for the existence of galaxies and clusters of galaxies, due to the action of gravity, and their discovery was called "the most important scientific discovery of the century, if not of all time" by Stephen Hawking. The COBE maps have been confirmed and improved by two succeeding space missions, the Wilkinson Microwave Anisotropy Probe (WMAP, built by GSFC with Princeton University), and the Planck mission built by ESA. Based on these maps, astronomers have now developed a "standard model" of cosmology and have built detailed numerical simulations that begin to match Hubble observations, and require the existence of both "dark matter" and "dark energy", neither of which has been detected or deduced in laboratory experiments. Dr. Mather is the recipient of numerous awards, including the Nobel Prize in Physics (2006) with George Smoot, for the COBE work, and the NASA Distinguished Service Medal (2007). He is a member of many professional societies including the National Academy of Sciences and the American Academy of Arts and Sciences.

His grandfather, Hobart Cromwell, was a bacteriologist who helped develop penicillin at Abbott Labs, his father, Robert Mather, was a statistician studying dairy cattle genetics at Rutgers University, and his mother Martha was an elementary school teacher. As a child he was fascinated by optics, electronics, and telescopes, with interest sparked by the American Museum of Natural History in New York City, and by the launch of the Sputnik. He attended public schools in rural northern New Jersey and graduated from Newton High School in 1964 (the year that the cosmic microwave background radiation was discovered), received his Bachelor of Arts degree from Swarthmore College with highest honors in physics in 1968, got the highest possible score on the Physics grad record exam, and received his PhD in physics from the University of California at Berkeley in 1974. His doctoral advisor there was Paul Richards, and his thesis on measurements of the cosmic microwave background radiation led directly to the COBE satellite, despite the failure of the first flight of a balloon payload. His postdoctoral advisor at the Goddard Institute was Patrick Thaddeus, who gave great encouragement to the idea of the COBE satellite and participated in the first proposal.

Dr. Mather is now working with teams and committees to develop plans for a future great telescope capable of observing signs of life on planets orbiting other stars.

Grand Challenges for Research and Development in Sustainable Energy Systems

10AM August 11, Friday @ Ballroom C - F



PROF. CHERRY MURRAY

Benjamin Peirce Professor of Technology and Public Policy in the John A. Paulson School of Engineering and Applied Sciences and Professor of Physics, Harvard University,

There is an enormous need for clean energy technology research and development to enable a global transition to sustainable energy systems. There are economic incentives for nations to invest in research and development to enable lower cost and more efficient systems: from 2010 to 2016, worldwide annual investments in renewable energy infrastructure have averaged about \$250B. The build out of renewables over the next decade will need to be far larger in order to meet the 2015 Paris goal of reducing the worldwide emissions of greenhouse gases by 30% by 2030. Beyond 2030, new and vastly cost-reduced technologies for energy efficiency and sustainability in all sectors of the global economy will be needed, as well as enhanced renewable technologies, flexible and smart electric grids combined with efficient and low cost energy storage. In order to sustain the Paris goal of an earth temperature rise by 2–4 degrees, humanity's greenhouse gas emissions must be reduced drastically, to below 70% of current levels by 2050. I will suggest areas of fundamental science research in which advances are needed in order to meet this grand challenge.

Biography

Cherry Murray, Benjamin Peirce Professor of Technology and Public Policy in the John A. Paulson School of Engineering and Applied Sciences and Professor of Physics, Harvard University, has made research accomplishments in the areas of light scattering, soft condensed matter physics, surface physics and nanostructures. Her current interests are in public policy for science and technology and national security.

Dr. Murray served as the Director of the Department of Energy's Office of Science, from 2015 until 2017, overseeing \$5.5 billion in competitive scientific research in the areas of advanced scientific computing, basic energy sciences, biological and environmental sciences, fusion energy sciences, high energy physics, and nuclear physics, as well as the management of 10 national laboratories. She was dean of Harvard University's School of Engineering and Applied Sciences from 2009 until 2014, and Principal Associate Director for Science and Technology from 2007 to 2009 and Deputy Director for Science and Technology from 2004 to 2007 at Lawrence Livermore National Laboratory. From 1978 to 2004, Dr. Murray held a number of positions at Bell Laboratories, Lucent Technologies, formerly AT&T Bell Laboratories and previously Bell Telephone Laboratories, Inc.

“Nano” as a Guiding Narrative: A Personal Journey

11AM August 11, Friday @ Ballroom C - F



PROF. HONGKUN PARK

Professor of Chemistry and Chemical
Biology and a Professor of Physics at
Harvard University

For decades, “nano” has served as one of the main narratives that guide the advancement of science and technology. In this presentation, I will briefly review, with my own personal experience as a “biased” guide, how this “nano” narrative has shaped the public image of science and technology and influenced human and resource investments. I will then describe how this narrative continues to shape my own research activities using two recent examples: (1) solid-state quantum optics based upon atomically thin semiconductors coupled to nanophotonics/plasmonics, and (2) CMOS-nanoelectrode arrays for highly multiplexed brain-machine interfacing. These examples illustrate how my own research is influenced by the “nano” narrative and how the developments of new nanoscale structures and tools can be leveraged to open up new lines of scientific inquiries in both physical and life sciences.

Biography

Hongkun Park is a Professor of Chemistry and Chemical Biology and a Professor of Physics at Harvard University. He is also an Institute Member of the Broad Institute of Harvard and MIT and an affiliate member of the Harvard Quantum Optics Center, Harvard Center for Brain Science, and Harvard Stem Cell Institute. He serves as an associate editor of Nano Letters and a member of the Editorial Board of Chemical Science, and is a fellow of the American Association for the Advancement of Science and World Technology Network. Awards and honors that Hongkun Park has received include the David and Lucile Packard Foundation Fellowship for Science and Engineering, the Alfred P. Sloan Research Fellowship, the Ho-Am Foundation Prize in Science, the Camille Dreyfus Teacher-Scholar Award, the NIH Director’s Pioneer Award, and the US DoD Vannevar Bush Faculty Fellowship.

LEADERS IN HEALTHCARE

10AM August 12, Saturday @ Ballroom C & D

This panel includes the top local Korean American executives and policy makers in Healthcare. Hear about what is on the horizon in this ever changing industry. How are local hospitals and doctors coping with rising costs and shrinking reimbursements? What potential challenges do they face as a result of the recent Presidential election? How is consolidation changing the healthcare industry locally?

The global healthcare industry is at a turning point. The rise of personalized medicine, fundamental change in how healthcare is paid for, an explosion of data and the transformation of the industry into a “global game” are just some of the most powerful forces roiling the landscape. At the same time, dramatic advances in artificial intelligence means that big data and so-called “deep learning” offer the potential of unprecedented insight and market power for those who figure out how to harness these tools.

MODERATOR

Max Han, Manager at Accenture

Max works as a Software Architect and IT Manager for Government clients. Prior to Accenture, Max has worked for other large Government Contractors such as SAIC and Deloitte. In addition to his Public Sector experience, Max has worked in the Healthcare, Life Sciences, Financial Services, Insurance, Media and Technology domains. Max graduated with a BS in Electrical Engineering from NYU, a MBA from the University of Maryland and is pursuing a MS in Finance at Johns Hopkins University. Aside from his professional career, Max runs a website and organizes forums for New York Seoul. New York Seoul is a large network of Korean American professionals dedicated to promoting the advancement of Korean Americans in the U.S. through networking, education and mentorship.

PANELISTS



DR. JENNIFER LEE

Deputy Under Secretary for Health
for Policy and Services
(Department of Veterans Affairs)

Dr. Lee serves as the Deputy Under Secretary for Health for Policy and Services in the Veterans Health Administration and Senior Advisor to the Secretary. In this position, Dr. Lee provides guidance to the Secretary and Under Secretary for health on a broad array of matters related to health policy, the VA’s health care delivery programs and key strategic initiatives. She also provides leadership for various programs and services within the Veterans Health Administration, including research, innovation, technology and partnerships. Prior to coming to the VA, Dr. Lee served as Deputy Secretary of Health and Human Resources, where she led the Governor’s bioscience initiative and helped push through legislation to combat opioid addiction in Virginia. Previously, Dr. Lee has served as a White House Fellow, as a health policy fellow on the U.S. Senate Health, Education, Labor and Pensions Committee and as a Policy Research Scholar at George Washington University. Dr. Lee received her bachelor’s in biophysics and biochemistry from Yale University, her medical degree from Washington University School of Medicine and completed her residency in emergency medicine at Johns Hopkins Hospital. She is board-certified and practicing Emergency Medicine physician.

PLENARY PANEL DISCUSSION



DR. SEONG K. MUN

President and CEO of
Open Source Electronic Health
Record Alliance (OSEHRA)

Seong K. Mun, PhD is founding President and CEO of Open Source Electronic Health Record Alliance (OSEHRA), a not-for-profit organization established by the US Department of Veterans Affairs promoting open source innovation in health IT. He is also a professor and director of Arlington Innovation Center: Health Research of Virginia Tech. He holds adjunct professor appointments Georgetown University School of Nursing. During the 1990's and 2000's, Dr. Mun was Professor of Radiology at Georgetown University Medical Center, and directed visionary research programs in filmless radiology (a.k.a. PACS), teleradiology, telemedicine, health informatics, medical robotics and global disease surveillance. He also served an Associate Vice President at Georgetown, managing congressional relations. In the 80's, at Columbia University in New York his team built one of the first clinical MRI systems in the world. He was an executive member of KSEA in 80's.



DR. RYUNG SUH, MD, MPP, MBA, MPH

Chair and Associate Professor,
Department of Health Systems
Administration (Georgetown
University)

Ryung Suh, MD, MPP, MBA, MPH, serves as Chair and Associate Professor in the Department of Health Systems Administration at Georgetown University. He previously served as a Senior Fellow for the National Opinion Research Center (NORC) at the University of Chicago and on the faculty of the Uniformed Services University of the Health Sciences. Dr. Suh has over twenty-three years of private sector experience as a health care consultant, research scholar, and physician executive and served for twenty-six years in the U.S. Army as an infantry and medical corps officer with a diverse set of operational, special operations, and military health system responsibilities.

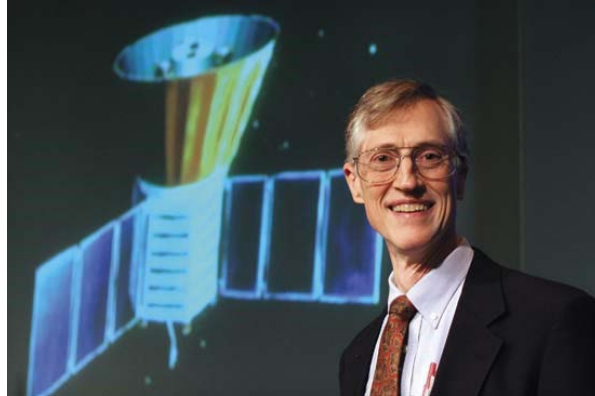
At Georgetown, Dr. Suh oversees an undergraduate health care management and policy program, two master of science programs in health systems administration, a strategic innovations group, and various initiatives focused on improving health and health care. He teaches on health policy, business innovations in health care, management systems, biotechnology management, health care consulting, and other topics. He has led management consulting and research firms that provide strategic advisory services; program development, management, and evaluation; and scientific and technical consulting services to government agencies and private sector organizations and brings that practitioner perspective as well to the classroom.

Dr. Suh is board-certified in occupational medicine and is a Fellow of the American College of Preventive Medicine (FACPM) and the American College of Occupational and Environmental Medicine (FACOEM). He served as the National President of the American Association of Public Health Physicians (AAPHP), on the Board of Regents for the American College of Preventive Medicine (ACPM), on the Board of Directors for the National Commission on Correctional Health Care (NCCHC), and as an advisor for the American Medical Association Common Procedural Terminology (CPT) Editorial Panel Advisory Committee, as well as various leadership positions within other professional organizations and medical specialty societies.

Dr. Suh graduated from the United States Military Academy and completed his medical, public policy, and management studies at Georgetown University, with additional studies at the Yonsei University School of International Studies and Trinity College, Oxford University. He is a combat veteran who has deployed to multiple overseas locations to include service as Task Force Surgeon during Operation Enduring Freedom, where he was awarded the Bronze Star Medal. His military qualifications include airborne, ranger, jumpmaster, and flight surgeon.

The History of the Universe from the beginning to the end: where did we come from, where can we go?

2PM August 10, Thursday @ Ballroom C/D



Where did we come from, and where are we going? I will outline the history of the universe from its early moments in the Big Bang, to the possible end. Our history is full of beneficial catastrophes, and we wouldn't be here without them: stars explode, the Moon is formed in a giant collision with the Earth, the Earth is bombarded by asteroids and comets for hundreds of millions of years, and multiple extinction events through hot, cold, poison, and asteroid impacts cause rapid evolution of life. But here we are, our ancestors survived and thrived through it all. Now, we can tell the story, we can look for more details, and we can begin to adventure through the solar system and eventually beyond, in partnership with a new entity, artificial intelligence coupled with robotics. Scientific discovery has been propelled by competition (including war) for thousands of years, so it's immensely important to public policy. I will illustrate with examples from NASA, including our measurements of the Big Bang, discoveries with the Hubble, and future telescopes like the James Webb Space Telescope (planned for 2018 launch) and beyond. Within a few decades, we may know that life is common in the universe, or perhaps not.

KSEA AWARDS RECIPIENTS

August 10, Thursday 10:00am (Ceremony)

• Outstanding Contribution to KSEA Award (Presented jointly by KSEA and MSIT)



Dr. Sung-Kwon Kang
KSEA 35th President

Research Staff Member
IBM T.J. Watson Research Center

Dr. Kang has had a distinguished career in industry having worked for IBM T.J. Watson Research Center (1984–current) and INCO Research & Development Center (1980–1984) after his Professorship in Stevens Institute of Technology (1977–1980). He received his Ph.D. from University of Pennsylvania (Materials Science and Metallurgy) in 1973 and B.S. from Seoul National University (Metallurgical Engineering) in 1969. His contribution in environmental friendly lead (Pb)–free solder interconnections and electrically conductive adhesives are well recognized nationally and internationally. He received a Fellow Award from TMS (2011) and IEEE (2009) as well as KBS Global Korean Award (2013).

During his tenure as the KSEA's 35th President, he established UKC2006 as a premier mainstream conference. Online system for registration and abstract submission was implemented for the first time. Many distinguished guests and speakers (e.g. MOST/KOFST) were invited, which led to the increased funding to the next admins. NMC was expanded to NMSC by implementing science program and NMSC budget increased by 3 times. He was actively involved in fund-raising and the 35th income was increased by 36%. He also provided a leadership as a committee chair including Election (96), Scholarship (99), Nomination (07), HAC (11), and LRPC (16). He has served as a committee member for total 38 years during his regular membership of 42 years. His service for KSEA is highly recognized.

• Engineer of the Year Award (Presented jointly by KSEA and KOFST)



Dr. Gyeong Soon Hwang

Paul D. and Betty Robertson Meek and
American Petrofina Foundation Centennial Professor
University of Texas at Austin

Dr. Hwang is the Paul D. and Betty Robertson Meek and American Petrofina Foundation Centennial Professor in Chemical Engineering at the University of Texas at Austin (UT-Austin). He received his BS (1991) and MS (1993) from Seoul National University and his PhD (1999, with MS in Applied Physics) from California Institute of Technology (Caltech), all in Chemical Engineering. He also carried out post-doctoral research at the Max Planck Institute for Solid State Research (1999) and Caltech (2000–2001). Since joining UT-Austin as an Assistant Professor in 2001, Dr. Hwang has rapidly developed his research program in computational materials and chemical science. His outstanding records of research, teaching, and service have led to his early promotion to Associate Professor with tenure (2006) and Full Professor (2011). He has been involved in many top-notch research projects concerning the electrochemical properties and performance of nanomaterials and molecular systems for energy, electronics and environment. Dr. Hwang has published over 170 articles in prospective peer-reviewed journals, such as Nature Materials, PRL, JACS and PNAS. He has given more than 130 presentations as an invited speaker, including plenary and keynote addresses at international conferences. His professional career has been recognized with multiple prestigious awards and honors, including Faculty Investment Initiative Award, NSF CAREER award, and ECS F.M. Becket Memorial Award.

KSEA AWARDS RECIPIENTS

August 10, Thursday 5:40am (Ceremony)

• Entrepreneur of the Year Award (Presented jointly by KSEA and Maeil Business Newspaper)



Dr. Tai Ryang Shin

President and Founder
Swagger Foods Corporation

Dr. Shin is the President and Founder of Swagger Foods Corporation, in Vernon Hills, Illinois. He received his doctorate in Food Science and Human Nutrition from University of Illinois, Urbana-Champaign. He started his business from a one-bedroom apartment in Chicago in 1978, when the national economy was struggling; and 39 years later, the company continues to grow from start-up to a successful business. The company manufactures foods such as a variety of seasoning mixes, side dish mixes, custom blends, clean label and nutrition driven formulations, and other innovative R&D.

As an entrepreneur, his accomplishments are well recognized in the industry as a trusted supplier of premium quality food products. Dr. Shin has made notable contributions to community and education, including providing a gift to UIUC for its Food Science Pilot Plant renovation, and establishing two scholarships, one of which is the Swagger Food Corporation Scholarship. He has a strong passion for education, and was awarded his Ph.D. degree at 65 years old. He is actively involved in several professional memberships and positions, and received several awards and recognitions. Dr. Shin is an accomplished entrepreneur, a contributor to the community and university, and a passionate developer for health and nutrition.

• Outstanding Chapter and Chapter President Award



Dr. Benjamin C. Lee
Michigan Chapter President

Research Scientist
INVIA Solutions

MI Chapter had held NMSCs, regional conferences & membership drives for the last three consecutive terms. Chapter Presidents and Technical Group Councilors from the chapter had participated in more than 75% of KSEA council meetings and email-voting. CP Benjamin Lee also contributed to YG activities and worked hard to obtain a 501c3 status as of 2/3/2017. Its other members also contributed to HQ activities such as UKC session organizing, YG and KWiSE. The chapter has not received any recognition since it was fully activated since 2010. Overall, Michigan Chapter and CP Benjamin Lee are well deserved for the award on the basis of the overall chapter activities and CP Lee's dedicated services to KSEA.

Dr. Lee received his B.S. in Electrical Engineering from Cornell University in Ithaca, New York, in 1999 and then received his M.S. and Ph.D. in Electrical Engineering: Systems from the University of Michigan in Ann Arbor, Michigan, in 2010 studying signal processing. His research interests include image reconstruction, inverse problems, medical imaging, and image processing with applications in CT and MRI. He has also been working as a research scientist at INVIA Medical Imaging Solutions in Ann Arbor, Michigan, USA, since its start-up in 2005, working on kinetic modeling, image reconstruction, computational geometry, and registration algorithms for commercial nuclear medicine cardiology quantification software. He has served as the Michigan Chapter President during the 2016-2017 term, has been helping organize various KSEA Young Generation events and programs, and is now serving as the Publication Director 1 in the 46th KSEA administration.

KSEA AWARDS RECIPIENTS

August 10, Thursday 5:40pm (Ceremony)

• Outstanding Community Service Award



Dr. Seogjoo Jang

Professor
Queens College, City University of
New York

Seogjoo Jang (SJ) received BS (89) and MS (93) degrees in Chemistry from Seoul National University, and PhD degree in Chemistry (1999) from the University of Pennsylvania. As a theoretical and computational chemist specializing in quantum dynamical processes in condensed and molecular media, he worked as a postdoctoral fellow/associate at MIT during 1999–2002 and as a Goldhaber Distinguished Fellow at Brookhaven National Laboratory in 2003–2005. He started working as an assistant professor at Queens College, City University of New York (CUNY) and serving as a doctoral faculty at the Graduate Center of CUNY in September, 2005. He was granted an early promotion to Associate Professor in 2009, got tenured in 2010, and was promoted to full professor in 2012. Since joining CUNY, SJ has developed an internationally recognized research program particularly focusing on energy and charge transport processes in natural and synthetic materials related to solar energy conversion, and has received NSF CAREER award (2008) and Camille Dreyfus Teacher Scholar Award (2010). His research projects have been supported continuously by both NSF and Department of Energy since 2009.

SJ has been serving KSEA since 2007, as vice president (2007–2009), senior vice president (2009–2010), and president (2010–2011) of the New York Metro Chapter, during which he led strengthening and enriching Korean–American math and science Olympiad events. During 2011–2014, he served as the council member of KSEA representing technical group B. As a project director of the 42nd KSEA administration, he organized Professional Development Workshop in 2004 to motivate and inspire more successful career development of younger generation of KSEA members. Most recently, as a project director of the 45th administration, in 2017, he led the first mentorship and leadership training (MeLT) workshop dedicated to creating training slides and contents for training KSEA members in their early career stages.

• Young Generation Leadership Award



Dr. Daegene Koh

Post-Doctoral Scholar
Georgia Tech

Dr. Koh is a post-doctoral scholar at the Center for Relativistic Astrophysics of the School of Physics at Georgia Tech. He received the KIPAC Fellowship in 2017 and will begin as post-doctoral fellow at the Kavli Institute for Particle Astrophysics and Cosmology at Stanford University in the Fall. He received his BS with distinction from Harvey Mudd College, CA, in 2011. He co-authored 2 peer-reviewed journal articles and 11 conference proceedings and talks. He also received NSF EAPSI Graduate Research Fellowship and other awards. His research focuses on using numerical simulations to understand the formation of the first stars and galaxies in the universe. Dr. Koh has provided an outstanding YG leadership and voluntary services for KSEA over a period spanning more than 6 years through various positions such as YGTLC Chair/Co-Chair/Organizer, NMSC volunteer, and UKC2015 local arrangement. As a leader of YGTLC2016, he displayed excellent management and organizational skills to assign all tasks completely, fairly and evenly so that the entire plans could be executed successfully. For YGTLC, he initiated a method of grouping tasks and a city tour so that all attendees and organizers can enjoy the conference together. His leadership for YG activities is well recognized.

2017 YOUNG INVESTIGATOR GRANT WINNER

August 10, Thursday 5:40pm (Ceremony)

The KSEA Young Investigator Grant is the KSEA's highest recognition given to young professionals who earned a doctoral degree in science or engineering, and have been working in academia, industry, or government for no more than 6 years after the degree. The grant of \$10,000 will be awarded to the recipient.



Dr. Jiook Cha

Assistant Professor
Columbia University

Dr. Jiook Cha is an assistant professor at the Department of Psychiatry of Columbia University Medical Center. He received his B.S. from Korea University in 2007 and Ph.D. in Neuroscience from State University of New York at Stony Brook in 2013. Prior to joining Columbia University in 2016, he was a post-doctoral researcher at the Columbia University Medical Center. He is a recipient of 2016 National Institute of Mental Health K01 Award (\$740k funding over 4 years) and three other research grants.

He has published 23 peer-reviewed articles in coveted journals and he also has an excellent citation record as a young investigator. With the KSEA Young Investigator Grant, Prof. Cha will investigate “Neurocognitive Mechanisms of Childhood Anxiety: Brain Circuitry of Fear Generalization.” The proposed work aims to provide the first evidence of the association of pediatric anxiety with fear generalization as well as to elucidate complex brain-behavior relationships underlying the fear generalization. Prof. Cha hopes that this research can contribute to developing neurobehavioral targets to determine when and where to intervene with childhood anxiety and to promote preventive therapeutic interventions to youth with pathological anxiety.



Dr. Aram Chung

Assistant Professor
Rensselaer Polytechnic Institute (RPI)

Dr. Aram Chung is an assistant professor in the Department of Mechanical, Aerospace and Nuclear Engineering at Rensselaer Polytechnic Institute (RPI). He received his B.S. from the School of Mechanical and Aerospace Engineering at Seoul National University (SNU) in 2006, and M.S. and Ph.D. from the Sibley School of Mechanical and Aerospace Engineering at Cornell University in 2009 and 2011, respectively. He then conducted postdoctoral studies for two years in the Department of Bioengineering at the University of California, Los Angeles (UCLA) before joining RPI.

He is a recipient of numerous honors and awards, and he has published 19 peer-reviewed articles in high-impact journals with an excellent citation record as a young investigator. With the KSEA Young Investigator Grant, Prof. Chung will investigate single-cell deformability based cancer disease identification and rapid drug screening by developing “Next Generation microFluidic cell Stretcher (NG-FS).” The proposed work aims to establish a new cell mechanotyping platform capable of characterizing large populations of single-cell deformability near real-time. With a successful development of NG-FS, it is possible to screen large cancer cell populations, identifying their specific stage and subtypes in real-time to answer fundamental questions in cancer cell stiffness associated diseases and their progression for clinical diagnosis and biophysical studies.

KSEA HONOR RECIPIENT

August 10, Thursday 5:40pm (Ceremony)

• Distinguished Sponsor Membership



Hyundai Motor Company has contributed exceptionally to the financial well-being of KSEA over the past several years. Hyundai Motor Company's sponsorship for UKC and KSEA is highly recognized, and they are honored to continue their support.

Established in 1967, Hyundai Motor Company has grown into the Hyundai Motor Group, with more than two dozen auto-related subsidiaries and affiliates. Hyundai Motor Company has seven manufacturing bases outside of South Korea including Brazil, China, the Czech republic, India, Russia, Turkey, and the United States. Hyundai Motor Company offers a full line-up of products including small to large passenger vehicles, SUVs and commercial vehicles.



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**PROGRAM
AT A GLANCE**

TIME	8/9 (WED)	8/10 (THU)	8/11 (FRI)	8/12 (SAT)	8/13 (SUN)
7:00 am – 8:00 am		BREAKFAST (Independence Center)			THE 46 TH KSEA ANNUAL COUNCIL MEETING
8:00 am – 9:40 am		PARALLEL SYMPOSIUM & FORUM			
9:40 am – 10:00 am		COFFEE BREAK			
10:00 am – 12:00 pm		PLENARY SESSION / OPENING CEREMONY	PLENARY SESSION	PLENARY SESSION	
12:00 pm – 1:20 pm		LUNCH (Independence Center)		CLOSING LUNCHEON (Independence Center)	
1:20 pm – 3:20 pm	REGISTRATION OPENS (Ballroom area)	JOINT SYMPOSIUM & FORUM			
3:20 pm – 3:40 pm		COFFEE BREAK			
3:40 pm – 5:40 pm	SPONSOR RECEPTION (5:30-6:00PM @ Ballroom E)	JOINT SYMPOSIUM & FORUM	POSTER SESSION	THE 46 TH KSEA ANNUAL COUNCIL MEETING	
6:00 pm – 9:00 pm	SPONSOR DINNER (Ballroom C & D)	BANQUET (Ballroom C-F)	NETWORKING DINNER		
9:00 pm – 11:00 pm		TGC/LCP ORIENTATION & FORMER PRESIDENT MEETING	LCP MTG AND TGC/APS PRESI- DENT MEETING (10:00-11:30PM)		

Thursday
08.10

PROGRAM LOCATION

- UKC-WIDE EVENT
- SYMPOSIUM
- JOINT SYMPOSIUM
- FORUM
- SPONSOR
- OTHERS

LEVEL	ROOM NAME \ TIME	8:00AM – 9:40AM	10:00AM – 12:00PM	12:00PM – 1:20PM	1:20PM – 3:20PM	3:40PM – 5:40PM	5:40PM – 9:00PM	9:00PM – 11:00PM
BALLROOM	BALLROOM A				IP Forum			
	BALLROOM B	BMP			FAN			
	BALLROOM C		OPENING CEREMONY / PLENARY SESSION		Nobel Laureate Public Lecture		BANQUET	
	BALLROOM D							
	BALLROOM E							
	BALLROOM F							
	POTOMAC I	PHY			CIT/CEA	CIT/CEA		
	POTOMAC II	EEC			EEC	EEC		
	POTOMAC III	CEA			CEA/MAN/CHM	CEA		
	POTOMAC IV	CIT/EEC			CIT	CEA		
	POTOMAC V	CHE			CHE/CHM	CHE/CHM		
	POTOMAC VI	CHM			CHM/CHE	CHM/CHE		
	WASHINGTON A	BME			BMP/BME	BME/BMP		
	WASHINGTON B	BMP			BMP	CEA/CIT		
	CONFERENCE THEATER	CEA			Congressional Sci. Policy	Fine Particulate Matter		TG / CP Orientation
INDEPENDENCE	INDEPENDENCE A			LUNCH				
	INDEPENDENCE B							
	CAPITOL ROOM	YSTLC	YSTLC		YSTLC	YSTLC	YSTLC	YSTLC
2ND FLOOR	TIDEWATER 1	MAS			MAS	MAS/BME/BMP		
	TIDEWATER 2				YGPF	YGPF		
	BOARD ROOM							
3RD FLOOR	ARLINGTON	MAN			BME/BMP	MAN/MSE		
	FAIRFAX	FAN			Bio Economy I	Bio Economy II		
	PRINCE WILLIAM	MSE			MSE/MAN	MSE		
	ROOSEVELT				KRRI	KHU		
	LINCOLN				KIST	RISP		
	JEFFERSON				KISTI	LG Electronics		
	KENNEDY	Job Interview (AmorePacific)			CJ	CJ		
ROOFTOP	CHESAPEAKE VIEW	VIP	VIP		VIP	VIP		FP Meeting

Friday
08.11

PROGRAM LOCATION

- UKC-WIDE EVENT
- SYMPOSIUM
- JOINT SYMPOSIUM
- FORUM
- SPONSOR
- OTHERS

LEVEL	ROOM NAME \ TIME	8:00AM – 9:40AM	10:00AM – 12:00PM	12:00PM – 1:20PM	1:20PM – 3:20PM	3:40PM – 5:40PM	5:40PM – 9:00PM	9:00PM – 11:00PM
BALLROOM	BALLROOM A				KEIT	KEIT		
	BALLROOM B	BME			SMB Workshop	SMB Workshop		
	BALLROOM C		PLENARY SESSION		KEIT	KEIT		
	BALLROOM D				KEIT	KEIT		
	BALLROOM E				KEIT	KEIT		
	BALLROOM F				KEIT	KEIT		
	POTOMAC I	PHY			PHY/BIO/CHM			
	POTOMAC II				EEC			
	POTOMAC III	CEA			CEA			
	POTOMAC IV	CIT			CIT			
	POTOMAC V	CHE			CHE/CHM	CHE		
	POTOMAC VI	CHM			CHM/CHE			
	WASHINGTON A	BME			BME/BMP			
	WASHINGTON B	BMP			KHIDI			
	CONFERENCE THEATER	BMP						TG APS MEETING
INDEPENDENCE	INDEPENDENCE A			LUNCH		POSTER		
	INDEPENDENCE B							
	CAPITOL ROOM	YSTLC	YSTLC		YSTLC	YSTLC	YSTLC	YSTLC
2ND FLOOR	TIDEWATER 1	MAS			MAS			
	TIDEWATER 2	YGPF			YGPF			
	BOARD ROOM							
3RD FLOOR	ARLINGTON	MAN			MAN			
	FAIRFAX	FAN			FAN			
	PRINCE WILLIAM	MSE			MSE			
	ROOSEVELT				Seoul City	Bio Tech		
	LINCOLN				KWiSE			
	JEFFERSON	Job Interview (CJ)			AAAS			
	KENNEDY	Job Interview (CJ)			NST	NST		
ROOFTOP	CHESAPEAKE VIEW	VIP	VIP		VIP	VIP		CP MEETING

* 5:40PM - 9:00PM, Networking Dinner (More information on page 64)

Saturday

08.12

PROGRAM LOCATION

- UKC-WIDE EVENT
- SYMPOSIUM
- JOINT SYMPOSIUM
- FORUM
- SPONSOR
- OTHERS

LEVEL	ROOM NAME \ TIME	8:00AM – 9:40AM	10:00AM – 12:00PM	12:00PM – 1:20PM	1:20PM – 3:20PM	3:40PM – 5:40PM	5:40PM – 9:00PM	9:00PM – 11:00PM
BALLROOM	BALLROOM A							
	BALLROOM B	SMB Workshop						
	BALLROOM C		PLENARY SESSION					
	BALLROOM D							
	BALLROOM E							
	BALLROOM F							
	POTOMAC I	PHY						
	POTOMAC II							
	POTOMAC III							
	POTOMAC IV	CIT						
	POTOMAC V							
	POTOMAC VI							
	WASHINGTON A	BME						
	WASHINGTON B	BMP						
	CONFERENCE THEATER	BMP			History Forum	Council Meeting		
INDEPENDENCE	INDEPENDENCE A			LUNCH				
	INDEPENDENCE B							
	CAPITOL ROOM	YSTLC	YSTLC					
2ND FLOOR	TIDEWATER 1							
	TIDEWATER 2	YGPF			YGPF	YGPF		
	BOARD ROOM							
3RD FLOOR	ARLINGTON							
	FAIRFAX	FAN			FAN			
	PRINCE WILLIAM							
	ROOSEVELT							
	LINCOLN							
	JEFFERSON							
	KENNEDY	Job Interview (AmorePacific)						
ROOFTOP	CHESAPEAKE VIEW							

YOUTH SCIENCE AND TECHNOLOGY LEADERSHIP CAMP (YSTLC 2017) SCHEDULE

DATE	PROGRAM
AUGUST 6. SUNDAY	<ul style="list-style-type: none"> Registration, Orientation, and Self Introduction with YSTLC Organizers Introduction about the NASA Science Team Project Assignment Washington DC Night Tour
PUBLIC HEALTH AND DISEASE DAY	
AUGUST 7. MONDAY	<ul style="list-style-type: none"> NIH Visiting Center, Nobel Laureate Exhibit Hall, Human Genome Project, Clinical Center, and Library Walter Reed Hospital/USUHS, Animal Facility Houses, Dummies Labs, and Rehabilitation Research Center Networking with Scientists and Engineers
BRAIN SCIENCE AND BIO-MEDICAL ENGINEERING DAY	
AUGUST 8. TUESDAY	<ul style="list-style-type: none"> Johns Hopkins University, Homewood Campus, Dept. of Biomedical Engineering, and Physics Lab Visiting George Peabody Library Visiting Johns Hopkins University, Medical Campus Labs Networking with JHU Medicine Mentors
AEROSPACE DAY	
AUGUST 9. WEDNESDAY	<ul style="list-style-type: none"> NASA Science Team Project and Science Musical Preparation NASA Goddard Space Flight Center Lab, Implement Rover Mission Project NASA Team Project Award Ceremony Perform Science Musical at the UKC 2017 VIP Reception Evening Session with Group Mentors for each Discipline
UKC 2017 WITH NOBEL LAUREATE	
AUGUST 10. THURSDAY	<ul style="list-style-type: none"> Attending UKC 2017 Plenary Session Meeting with Nobel Prize Winner Attending Public Lecture by Nobel Laureate, Dr. John Mather Attending Afternoon Symposiums/Forums with Mentors followed by Discussion
UKC 2017 CONFERENCE PROGRAM	
AUGUST 11. FRIDAY	<ul style="list-style-type: none"> Attending Plenary Session, Lectures from Globally Renowned Scientists Attending Afternoon Symposiums/Forums with Mentors followed by Discussion
CLOSING YSTLC 2017	
AUGUST 12. SATURDAY	<ul style="list-style-type: none"> YSTLC 2017 Video Presentation YSTLC 2017 Award Ceremony, and Photo Session

PLENARY SCHEDULE

WEDNESDAY, AUGUST 9, 2017

Chair: Young-Kee Kim (Louis Block Distinguished Service Professor, University of Chicago)

5:30 PM - 9:00 PM	Sponsor Reception and Dinner (Invitation Only)	Ballroom E
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THURSDAY, AUGUST 10, 2017

Opening Ceremony and Plenary Session I

Chair: Yongho Sohn (Pegasus Professor and Associate Director, University of Central Florida)

10:00 AM - 12:00 PM	Opening Ceremony <ul style="list-style-type: none"> National Anthems (Korea and USA) Opening Remarks Eun-Suk Seo, President, Korean-American Scientists and Engineers Association Welcoming Remarks - Myung-Ja Kim, President, Korean Federation of Science and Technology Societies Congratulatory Remarks <ul style="list-style-type: none"> Sang Jin Shin, Chairman, National Assembly Science; ICT & Future Planning, Broadcasting and Communications Committee Wonho Choi, Director General, Ministry of Science and ICT (MSIT) Terry McAuliffe, Governor of Virginia-video message Yumi Hogan, First Lady of the State of Maryland Mark Keam, Member of the Virginia House of Delegates KSEA Award Ceremony <ul style="list-style-type: none"> Outstanding Contribution to KSEA Award Presented by MSIT Engineer of the Year Award Presented by KOFST Plenary Keynote Lecture Dr. John Mather, Senior Astrophysicist, NASA Goddard Space Flight Center, "From the Big Bang to the end of the universe, and how we'll learn more with the James Webb Space Telescope" Sponsor Talk <ul style="list-style-type: none"> Il-Pyung Park, Executive Vice President, LG Electronics "Software Driven Innovation at LGE" Roh, Hang Duk, Executive Vice President, CJ Bio Business Unit "The Introduction of new biomaterial of CJ BIO" Sun Hwa Han, President, Korea Institute of Science and Technology Information (KISTI) "Open Science" 	Ballroom C-F
12:00 PM - 1:20 PM	<p>Luncheon</p> <p>Remarks by Ho Young Ahn, Ambassador of the Republic of Korea</p>	Independence

2:00 PM - 3:00 PM	Public Lecture with Dr. John C. Mather, the 2006 Nobel Prize Winner "The History of the Universe from the beginning to the end: where did we come from, where can we go?"	Ballroom C & D
5:40 PM 9:00 PM	Conference Banquet <ul style="list-style-type: none"> Sponsor Talk <ul style="list-style-type: none"> Sunchan Jeong, Director, Institute for Basic Science (IBS) "Heavy Ion Accelerator for new horizon" Sang Hyuk Son, President, Daegu Gyeongbuk Institute of Science and Technology (DGIST) "Innovative Convergence University for a Smart New World, DGIST" Moohyun Cho, Vice President, Pohang University of Science and Technology (POSTECH) "POSTECH, opening a new path of value creation" Award Ceremony <ul style="list-style-type: none"> Young Investigator Grant Award Entrepreneur of the Year Award Outstanding Community Service Award Outstanding Chapter and Chapter President Award Young Generation Leadership Award Distinguished Sponsor Membership Award KSEA Band Performance KSEA Talent Show 	Ballroom C-F

FRIDAY, AUGUST 11, 2017

Plenary Session II

Chair: Benjamin Lee (Research Scientist, INVIA)

10:00 AM - 12:00 PM	<ul style="list-style-type: none"> Sponsor Talk <ul style="list-style-type: none"> Kichul Lim, President, Korea Institute of S&T Evaluation and Planning (KISTEP) "Policy Goals and Initiatives for KISTEP in the New Administration: Leading Korea's Future through Science, Technology and Innovation" Mooyoung Jung, President, Ulsan National Institute of Science and Technology (UNIST) "UNIST Research Brands Preparing for the 4th Industrial Revolution" Plenary Keynote Lecture I Dr. Cherry Murray, Benjamin Pierce Professor of Technology and Public Policy and Professor of Physics, Harvard University "Grand Challenges for Research and Development in Sustainable Energy Systems" Sponsor Talk <ul style="list-style-type: none"> Byong-Sung Kwak, President, Korea Institute of Energy Research (KIER) "Tackling the energy and environmental challenges of Korea" Plenary Keynote Lecture II Hongkun Park, Professor of Chemistry and Chemical Biology and of Physics, Harvard University "'Nano' as a Guiding Narrative: A Personal Journey" 	Ballroom C-F
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PLENARY SCHEDULE

12:00 PM - 1:20 PM	Luncheon	Independence
SATURDAY, AUGUST 12, 2017		
Plenary Session III Chair: Byungkyu Brian Park (Associate Professor, University of Virginia)		
10:00 AM - 12:00 PM	<ul style="list-style-type: none"> • Sponsor Talk - Jaeho Yeom, President, Korea University • Plenary Panel Discussion Moderator: Max Han, Manager, Accenture - Dr. Jennifer Lee, Deputy Under Secretary for Health for Policy and Services, Department of Veterans Affairs - Dr. Seong K Mun, President and CEO, Open Source Electronic Health Record Alliance (OSEHRA) - Dr. Ryung Suh, Chair and Associate Professor, Department of Health Systems Administration • Award Ceremony - Graduate Scholarship Award - Youth Science & Technology Leadership Award - Poster Presentation Award • UKC 2018 Announcement K. Stephen Suh, President-Elect of Korean-American Scientists and Engineers Association • Closing Remarks Eun-Suk Seo, President of Korean-American Scientists and Engineers Association 	Ballroom C-F
12:00 PM - 1:20 PM	Closing Luncheon	Independence

UKC 2017 will focus on basic science, industry technology and emerging technology. Significant research findings, R&D trends, and future prospects of sciences and technologies are solicited in the areas including, but not limited to the following.

BASIC SCIENCE PROGRAM		
PHY	Physics	Chair: Chueng-Ryong Ji (NCSU) / Co-Chairs: Bum-Hoon Lee (Sogang Univ.), Kyungseon Joo (Univ. of Connecticut)
CHM	Chemistry	Chair: Dong-Hee Son (Texas A&M Univ.) / Co-Chairs: Sungjee Kim (POSTECH), Jong-In Hahm (Georgetown Univ.)
MAS	Math/Applied Math/Statistics	Chair: Sookkyung Lim (Univ. of Connecticut) / Co-Chairs: Chang-Ock Lee (KAIST), Myles Kim (Florida Polytechnic Univ.)

ENGINEERING PROGRAM		
CHE	Chemical Engineering	Chair: Hyunmin Yi (Tufts University) / Co-Chairs: Daeyeon Lee (Univ. of Pennsylvania), Jinwoo Lee (POSTECH)
CIT	Computer Sciences and Information Technologies	Chair: Jeho Park (Harvey Mudd College) / Co-Chairs: Woontack Woo (KAIST), Eunjee Song (Baylor University)
MSE	Materials Science and Engineering	Chair: Yongho Sohn (Univ. of Central Florida) / Co-Chairs: Gwan-Hy-oung Lee (Yonsei Univ.), YeonWoong Jung (Univ. of Central Florida)
MAN	Mechanical, Aerospace and Naval Engineering	Chair: Chang Kyoung Choi (Michigan Tech. Univ.) / Co-Chairs: Keunhan (Kay) Park (Univ. of Utah), Seokmin Kim (Chung-Ang Univ.)
CEA	Civil, Environmental, Architecture	Chair: Yong-Rak Kim (Univ. of Nebraska) / Co-Chairs: Boo-Hyun Nam (Univ. of Central Florida), Dae-Hong Kang (Duke Univ.)
EEC	Electrical, Electronics and Communications	Chair: Tom Oh (Rochester Institute of Technology) / Co-Chairs: Gon Namgoong (Old Dominion Univ.), Joeng Nyeo Kim (ETRI)

HEALTH AND MEDICAL PROGRAM		
FAN	Food, Agriculture and Nutrition	Chair: Youngmok Kim (Synergy Flavors, Inc.) / Co-Chairs: Hongsik Hwang (USDA-ARS), Seung-Joo Lee (Sejong Univ.)
BMP	Bio, Medical and Pharmaceutical	Chair: Young-sup Yoon (Emory Univ.) / Co-Chairs: In-Hyun Park (Yale Univ.), Woong-Yang Park (Sungkyunkwan Univ.)
BME	Biomedical Engineering	Chair: Ick Chan Kwon (KIST) / Co-Chairs: Jennifer Shin (KAIST), Ho-Wook Jun (Univ. of Alabama)

INTERDISCIPLINARY SESSIONS	
BME/BMP	Drug Development
BME/BMP	Exosome Biology and Engineering for Medicine
BME/BMP	New Drug Discovery
CEA/CIT	Smart City
CEA/MAN/CHM	Carbon Capture Storage and Utilization (CCSU)
CHM/CHE	Advanced Polymeric and Nanomaterials: Quantum Dots and Exciton Dynamics, Advanced polymeric materials, Nanostructures for Energy Application 1 & 2,, Advanced Nanomaterial Manufacturing Technologies for Energy and Organic Electronics, Materials for Energy Applications
CIT/CEA	Connected and Automated Vehicle 1 & 2
CIT/EEC	Cybersecurity
MAN/MSE	Nano-Micro Fabrication for Bio/Energy/Material
MAS/BME/BMP	Mathematical Aspects of Biology and Biomedical Engineering: Modeling, Simulation, and Analysis
MSE/MAN	Additive Manufacturing / 3D Printing

AUGUST 10, THURSDAY, 8:00 – 9:40AM

Basic Science PHY

@ Potomac I
Ballroom Level

PHY Session: Fundamental Physics

Chair: Sung-Won Lee (Texas Tech University)

Time	Title and Speaker
8:00	[Invited] Recent Results from CMS Experiment at LHC Sung-Won Lee (Texas Tech University)
8:20	[Invited] Gravity with Higher Curvatures Bum-Hoon Lee (Sogang University)
8:40	[Invited] Exclusive Meson Photoproduction off Bound Nucleons William J. Briscoe (The George Washington University)
9:00	[Invited] Proton Puzzle Chueng-Ryong Ji (North Carolina State University)
9:20	[Invited] On the Collapse and Magnetization of Primordial Gas Clouds Daegene Koh (Georgia Institute of Technology)

Basic Science CHM

@ Potomac VI
Ballroom Level

CHM Session: Biological and Soft Materials I

Chair: Jong-In Hahn (Georgetown University)

Time	Title and Speaker
8:00	Two- and three-color single molecule FRET study of binding of intrinsically disordered proteins Hoi Sung Chung (National Institute of Health)
8:25	Learning molecular level design principles from photosynthetic light harvesting complexes Seogjoo Jang (City University of New York)
8:50	Raman Analysis of Polyethylene Melting Young Jong Lee (National Institute of Standards and Technology)
9:15	Single-Molecule Investigation Reveals Nucleosome Dynamics During Transcription Elongation Tae-Hee Lee (Penn State University)

Basic Science MAS

@ Tidewater I
2nd Floor

MAS Session: Discrete Math/Discrete Modeling

Chair: Sung-Yell Song (Iowa State Univ), Co-Chair: Ji Young Choi (Shippensburg Univ)

Time	Title and Speaker
8:00	Partial geometric designs on vector spaces over finite fields Sung-Yell Song (Iowa State Univ)
8:25	Digit Sum of an Integer Ji Young Choi (Shippensburg Univ)
8:50	A mathematical model predicts a delayed insulin peak during an oral glucose tolerance test as a high risk factor for diabetes Joon Ha (National Institute of Health)
9:15	Optimal Experimental Designs for Mixed Categorical and Continuous Responses Soohyun Kim (Arizona State University)

Engineering CHE

@ Potomac V
Ballroom Level

CHE Session: Biochemical Engineering and Synthetic Biology

Chair: Jeongwoo Lee (UMass Amherst), Co-chair: Hyunmin Yi (Tufts University)

Time	Title and Speaker
8:00	[Invited] Developing beneficial microbes to inhibit deleterious biofilms Seok Hoon Hong (Illinois Institute of Technology)
8:25	[Invited] Establishing mechanically active mucosal interface in a multi-well plate Jungwoo Lee (UMass Amherst)

8:50	[Invited] Functional Hydrogel Microspheres as Robust Biosensing and Biomacromolecular Conjugation Platforms Hyunmin Yi (Tufts University)
9:15	[Keynote] Engineering Microorganism for Biotransformation of C1 Compounds to High Value-Added Products Gyoo Yeol Jung (PosTech)

Interdisciplinary CIT/EEC

@ Potomac IV
Ballroom Level

Interdisciplinary CIT/EEC Session: Cybersecurity

Chair: Young Choi (Regent University), Co-Chair: Tom Oh (Rochester Institute of Technology)

Time	Title and Speaker
8:00	[Invited] Effectiveness of TM Forum and LoRa Alliance Resources Usage in Communications Security Research and Education Young Choi (Regent University)
8:20	Assembly Level Clock Glitch Insertion Attack into An XMEGA MCU Chansu Yu (Cleveland State University)
8:40	The Role of IT/IS in International Marketing Research: Antecedents, Processes, and Outcomes Jin Ho Kim (Old Dominion University)
9:00	Internet of Everything Security Threats Jungwoo Ryoo (Pennsylvania State University-Altoona)
9:20	Increasing Efficiency of Android Malware Analysis Tae (Tom) Oh (Rochester Institute of Technology)

Engineering MSE

@ Prince William
3rd Floor

MSE Session: Frontiers of Materials Science - I

Chair: Minseo Park (Auburn University)

Time	Title and Speaker
8:00	[Keynote] Functional High Yield Molecular-scale Electronic Device Takhee Lee (Seoul National University)
8:30	[Invited] Ultrahigh Elastic Strain Energy Storage in Organic-Inorganic Hybrid Polymer Nanopillars Generated by Metal Oxide Infiltration Synthesis Chang-Yong Nam (Brookhaven National Laboratory)
9:00	Two-Dimensional Transition Metal Dichalcogenide Hybrid Atomic Layers: 2D Van der Waals Heterostructures to Mixed Dimensional Materials YeonWoong Jung (University of Central Florida)
9:20	Two-dimensional Materials and van der Waals Heterostructures for Future Electronics Gwan-Hyoung Lee (Yonsei University)

Engineering MAN

@ Arlington
3rd Floor

MAN Session: Manufacturing

Chair: Chang Kyoung Choi (Michigan Technological University)

Time	Title and Speaker
8:00	4D Printing: Additive Manufacturing of Reconfigurable Soft Materials Howon Lee (Rutgers University – New Brunswick)
8:15	[Invited] Property Control of Metal 3D Printed Parts Via Reactive Sintering Process Junghoon Yeom (Michigan State University)
8:35	Advanced Manufacturing Technologies for New Medical Devices Youngjae Chun (U. of Pittsburgh)
8:50	Soft Material-Enabled Bioelectronics for a Human-Wheelchair Interface Woon-Hong Yeo and Yongkuk Lee (Virginia Commonwealth University / Georgia Institute of Technology)

9:05	Mechanically Reinforced Skin Electronics for Biomedical Application Chi Hwan Lee (Purdue University)
9:20	Soft Robotics in Minimally Invasive Surgery and Medical Devices Sang-Eun Song (University of Central Florida)

Engineering CEA

@ Potomac III
Ballroom Level

CEA Session: Infrastructure Resilience I

Chair: Chungwook Sim (University of Nebraska-Lincoln), Co-Chair: Hyungchul Yoon (Michigan Technological Univ.)

Time	Title and Speaker
8:00	[Invited] Corrosion-Induced Bridge Deterioration Seung-Kyoung Lee (SK Lee and Associates, Inc.)
8:40	Air-Coupled Ultrasonic Applications for Full-Scale Civil Infrastructure Hajin Choi (Federal Highway Administration)
8:55	Estimation of Global Structural Responses from GNSS Measurement Data on Bridges Junho Choi (Texas A&M University)
9:10	Remote Localization from Multi-modal Mobile Sensing Hyungchul Yoon (Michigan Technological University)
9:25	Determination of Creep Compliance of Asphalt Mixtures with Pneumatic Indirect Tensile Tester Kang-Won Lee (University of Rhode Island)

Engineering CEA

@ Conference Theater
Ballroom Level

CEA Session: Water and Environment I

Chair: Jae Hyeon Ryu (University of Idaho), Co-Chair: Dae-Hong Kim (University of Seoul)

Time	Title and Speaker
8:00	[Invited] Designing Low Impact Sustainable Development Treatment Systems for Agricultural Environments Stevn Trinkaus (Trinkaus Engineering, LLC)
8:20	Evaluating Changes of Citizen's Values on Identification of Hydrological Vulnerability between the Past and Present for Sustainable Watershed Planning Chang-Yu Hong (Portland State University)
8:40	Application of Unmanned Aerial System (UAS) for Water Research and Environmental Studies Jae Hyeon Ryu (University of Idaho)
9:00	Characteristics Classification of Irrigation Dam for Development of Geotechnical Risk Analysis Model Jeong-Yeul Lim, Nam-Ryong Kim (K-Water Institute, Korea Water Resource Corporation)
9:20	Performance and Economy of Eco-Melting on Roads Youngguk Seo (Kennesaw State University)

Engineering EEC

@ Potomac II
Ballroom Level

EEC Session: IoT, Manufacturing and Image Processing

Chair: Gon Namkoong (Old Dominion University)

Time	Title and Speaker
8:00	Automated Fuse Sewing Process for Shoe Manufacturing In Hoon Jang (KITECH)
8:20	Mobility-aware Vehicle-to-Grid (V2G) Optimization in Smart Grid based Power Distribution Network Muhammad Hussain (The City University of New York)
8:40	Hierarchical GM-PHD Filter for False Alarm Reduction in Search and Tracking Task Yoonchang Sung (Virginia Tech)
9:00	Quantifying the Consistency of Wearable Knee Acoustical Emission Measurements During Complex Motions Hyeon Ki (Georgia Institute of Technology)

9:20	3D-IC Chip Inspection Using GPU Acceleration Kyung-Chan Jin (KITECH)
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FAN Session: Recent Research and Emerging Topics in Food Science

Chair: Seung K Park (Kyounghee University), Co-Chair: Jangho Kim (University of Idaho)

Time	Title and Speaker
8:00	Tea Creaming in Nonfermented Teas from <i>Camellia sinensis</i> and <i>Ilex vomitoria</i> Youngmok Kim (Synergy flavors, Inc)
8:20	Comprehensive Traceability Workshops in Caribbean Countries Jaheon Koo (IFT)
8:40	[Invited] Food Safety Modernization Act (FSMA) related food safety education and outreach for hard-to-reach audiences in the Pacific Northwest and Alaska using current Land-Grant university extention system Jangho Kim (University of Idaho)
9:00	Understanding microbiomes in poultry for promotion of health and productivity Youngmin Kwon (University of Arkansas)
9:20	Development of a method for improving the flavor quality of Brazilian coffee Seung K Park (Kyounghee University)

BMP Session: Neuroscience

Co-Chairs: Sangwon F Kim (Johns Hopkins University), In-Hyun Park (Yale University)

Time	Title and Speaker
8:00	The role of lipid on neuronal function Sangwon F Kim (Johns Hopkins University)
8:20	Interplay between mental disorder risk factor and PV interneuron circuit results in excitation/inhibition imbalance Eunchai Kang (Johns Hopkins University)
8:35	GPR110 signaling in omega-3 fatty acid-derived neurodevelopment and neuroprotection Hee-Yong Kim (Laboratory of Molecular Signaling, NIAAA)
8:50	Lag3 mediates cell-to-cell transmission of alpha-synuclein pathology Han Seok Ko (Johns Hopkins University)
9:05	Reprogramming and Rett syndrome In-Hyun Park (Yale University)
9:20	Imaging primary sensory neurons in vivo for somatosensory research Yu Shin Kim (University of Texas Medical Branch, Galveston)

BMP Session: Cancer Biology

Co-Chairs: Woongyang Park (Samsung Genome Institute), Eunjung Lee (Harvard Medical School)

Time	Title and Speaker
8:00	The quest for hidden cancer mechanisms for precision medicine Eunjung (Alice) Lee (Harvard Medical School)
8:20	Mutational Signature in Cancer Genomes: DNA Damages and Repairs Jaegil Kim (Broad Institute of Harvard and MIT)
8:35	Comprehensive molecular and immune profiling of non-small cell lung cancer and matched distant metastases suggests distinct molecular mechanisms underlying metastasis in different patients Won-chul Lee (The University of Texas MD Anderson Cancer Center)

**Health and Medical
FAN**
@ Fairfax
3rd Floor

**Health and Medical
BMP**
@ Washington B
Ballroom Level

**Health and Medical
BMP**
@ Ballroom B
Ballroom Level

AUGUST 10, THURSDAY, 8:00 – 9:40AM

8:50	Genomic alterations in function regions for cancer genomes Youngsook (Lucy) Jung (Harvard Medical School)
9:05	Structured component based analysis of integrating miRNA-mRNA data Taesung Park (Seoul National University)
9:20	Integrated analysis of clinical and genomic data for precision cancer medicine Woongyang Park (Samsung Genome Institute)

BME Session: Lab on a chip

Co-Chairs: Yongtae Kim (Georgia Tech), Seok Chung (Korea University)

Time	Title and Speaker
8:00	Anisotropically organized 3D culture platform for reconstruction of a hippocampal neural network Nakwon Choi (KIST)
8:20	A microengineered human cornea-on-a-chip for evaluating ocular drugs Jungkyu Kim (Texas Tech)
8:35	Multi-organ-on-a-chip for reproducing whole-body response to drugs Jong Hwan Sung (Hongik University)
8:50	Probing the effect of engineered HDL-mimetic nanoparticles on vascular endothelium using physiological biomimicry Yongtae Kim (Georgia Tech)
9:05	In vitro reconstitution of 3D brain microenvironments Seok Chung (Korea University)
9:20	On-chip drug cocktail analyses on rare cells from blood SJ Claire Hur (Johns Hopkins University)

**Health and Medical
BME**

@ Washington A
Ballroom Level

AUGUST 10, THURSDAY, 10:00 – 12:00PM

**PLENARY
SESSION**

@ Ballroom C-F
Ballroom Level

Plenary
NOBEL NAUREATE, DR. JOHN MATHER (NASA Goddard Space Flight Center)

AUGUST 10, THURSDAY, 2:00 – 3:00PM

**PUBLIC
LECTURE**

@ Ballroom C/D
Ballroom Level

Plenary
NOBEL NAUREATE, DR. JOHN MATHER (NASA Goddard Space Flight Center)

AUGUST 10, THURSDAY, 1:20 – 3:20PM

SPONSOR & KSEA FORUMS

Forum Name	Location	Full Description
BIO ECONOMY I Drug Development & Approval I	Fairfax, 3F	p.71
CJ (CheilJedang)	Kennedy, 3F	p.73
CONGRESSIONAL SCIENCE POLICY	Conference Theater, Ballroom Level	p.75
IP (Intellectual Property)	Ballroom A, Ballroom Level	p.77
KIST (Korea Institute of Science and Technology)	Lincoln, 3F	p.80
KISTI (Korea Institute of Science and Technology Information)	Jefferson, 3F	p.81
KRRI (Korea Railroad Research Institute)	Roosevelt, 3F	p.82
YGPF (Young Generation and Professional Forum)	Tidewater II, 2F	p.91

Interdisciplinary CHM/CHE @ Potomac VI Ballroom Level

Interdisciplinary CHM/CHE Session: Advanced Polymeric and Nanomaterials 1: Quantum Dots and Exciton Dynamics

Chair: Sungjee Kim (POSTECH)

Time	Title and Speaker
1:20	Characterization of Exciton Dynamics in Functional Electronic Systems Dongho Kim (Yonsei University)
1:50	Mn-doped CsPbX₃ Nanocrystals and Exciton-Mn Energy Transfer Dynamics Dong Hee Son (Texas A&M University)
2:15	Beyond the Bandgap Transition of Colloidal Quantum Dots Kwang Seob Jeong (Korea University)
2:40	Light-Induced Modulation of Quantum Dot Conjugate Fluorescence Sungjee Kim (POSTECH)
3:00	Characterization of Exciton Dynamics in Functional Electronic Systems Dongho Kim (Yonsei University)

Interdisciplinary CHM/CHE @ Potomac V Ballroom Level

Interdisciplinary CHM/CHE Session: Advanced Polymeric and Nanomaterials 2 : Advanced polymeric materials

Chair: Seok Hoon Hong (Illinois Institute of Technology), Co-chair: Daeyeon Lee (UPenn)

Time	Title and Speaker
1:20	[Invited] Microfluidic Design and Synthesis of Shape-Variant Functional Droplets and Bubbles Pil Jin Yoo (Seongkyunkwan University)
1:45	[Invited] Flexible and Stretchable FET-Type Sensors Based on Organic and Polymeric Materials Joon Hak Oh (POSTECH)
2:10	[Keynote] Gyroid Structures of High-Molecular-Weight Block Copolymer Self-assembly and Membrane Performance Du Yeol Ryu (Yonsei University)
2:35	[Keynote] UV curing of glycidyl POSS epoxy films Chang Yeol Ryu (RPI) and Joona Bang (Korea University)

Basic Science MAS

@ Tidewater I
2nd Floor

3:00	[Invited] Carbon fiber from new melt processable of acrylonitrile based quad-polymer precursor for green carbon fiber technology Samsuddin F. Mahmood, Benjamin L. Batchelor, Minhye Jung, Kyusoon Park, Duck J. Yang (UT Dallas, KICCT)
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MAS Session: Statistics in Data Science

Chair: Dong-Yun Kim (NIH), Co-Chair: Grace Hyun Kim (UCLA)

Time	Title and Speaker
1:20	HRCT Texture Feature Selection Using Particle Swam Optimization in Unbalanced Data Grace Hyun Kim (UCLA)
1:40	A blinded Randomized Trial to Examine the Effect of Hip Muscle Retraining for Fall Prevention among Diabetic Patients Jimin Lee (Univ of North Carolina Asheville)
2:05	Survey Nonresponse Study Using Standard Exploratory Data Analysis (EDA) Tools MoonJung Cho (U.S. Bureau of Labor Statistics)
2:30	Analysis of Type-I hybrid censored data under constant-stress partially accelerated life testing Seunggeun Hyun (University of South Carolina Upstate)
2:55	Continuous monitoring of patient accrual in multi-center clinical trials Dong-Yun Kim (National Institute of Health)

Engineering CIT

@ Potomac IV
Ballroom Level

CIT Session: Machine Learning and Data Science

Chair: Jeongkyu Lee (University of Bridgeport)

Time	Title and Speaker
1:20	[Invited] Mining Social Networks Using Topology Jeongkyu Lee (University of Bridgeport)
1:40	Massive Scale Deep Learning for Predicting Extreme Climate Events Sookyoung Kim (Georgia Institute of Technology)
2:00	Automatic paragraph generation using neural networks Chulwoo Kim (Pace University)
2:30	Mining Course Trajectories of Successful and Failure Students: An Extended Abstract Jin Soung Yoo (IPFW)
2:40	Robotic Process Automation and Cognitive John Lee (KPMG)
3:00	Graph-based Attention Model for Healthcare Representation Learning Edward Choi (Georgia Institute of Technology)

Interdisciplinary CIT/CEA

@ Potomac I
Ballroom Level

Interdisciplinary CIT/CEA Session: Connected and Automated Vehicles (CAV-1)

Chair: Yu Seung Kim (Ford Motors), Co-Chair: Guiling Wang (NJIT)

Time	Title and Speaker
1:20	[Invited] Intelligent Trucking System - Connected and Automated Sungbok Kwak (FLEETUP)
2:00	An efficient key establishment scheme for VANETs Kiho Lim (University of South Dakota)
2:20	Speed Harmonization using Optimal Control Algorithm under Mixed Traffic of Automated Vehicles and Human Driven Vehicles Sungah Hong (University of Virginia)
2:40	An Effects Analysis of Logistics Collaboration: The Case of Pharmaceutical Supplies in Seoul Dongju Park (University of Seoul)
3:00	Simulation-based Framework for Connected and Automated Vehicle (CAV) Impact Assessment Joyoung Lee (NJIT)

**Interdisciplinary
MSE/MAN**
@ Prince William
3rd Floor

Interdisciplinary MSE/MAN Session: Additive Manufacturing / 3D Printing

Chair: Yongho Sohn (University of Central Florida)

Time	Title and Speaker
1:15	Group Photo
1:20	[Invited] ARL Center for Materials and Manufacturing Sciences Kyu C. Cho (U.S. Army Research Laboratory)
1:50	[Invited] Polymer Physics of Materials Extrusion 3D Printing Kalman Migler (National Institute of Standards and Technology)
2:20	[Invited] Additive Manufacturing of Metals: Building Unreliable Micro-structures 20 Microns at a Time Lyle Levine (National Institute of Standards and Technology)
2:50	[Invited] Fabrication of NiTi Scaffolds via Additive Manufacturing and Gas-Phase Alloying Ashley Paz Y Puente (University of Cincinnati)

**Interdisciplinary
CEA/MAN/CHE**
@ Potomac III
Ballroom Level

Interdisciplinary CEA/MAN/CHE Session: Carbon Capture Storage and Utilization (CCSU)

Chair: Seunghee Kim (University of Nebraska-Lincoln), Co-Chair: Sunho Choi (Northeastern University)

Time	Title and Speaker
1:20	[Invited] Overview of U.S. Department of Energy's Carbon Storage R&D Program Darin Damiani (Office of Fossil Energy, U.S. Department of Energy)
1:50	Fiber Optic Sensor for Sensing Carbon Dioxide Gas Martin Byung-Guk Jun (Purdue University)
2:05	Pore-Network Simulations for CO2 Geologic Sequestration Seunghee Kim (University of Nebraska-Lincoln)
2:20	Thermal Fracturing in Reservoirs - Implications in CO2 Geostorage Minsu Cha (Texas A&M University)
2:35	Joint Analysis of Integrated Flow, Geomechanics, and Geophysics in Geological CO2 Sequestration Jihoon Kim (Texas A&M University)
2:50	Predictive Modeling of Nanoporous Materials for Carbon Capture Yongchul Chung (Pusan National University)
3:05	Porosity Variations in Gravimetric Modelling of Geological CO2 Reservoir Jeong Woo Kim (University of Calgary)

**Engineering
EEC**@ Potomac II
Ballroom Level**EEC Session: Microelectronics I**

Chair: Jungkwun Kim (Kansas State University)

Time	Title and Speaker
1:20	[Keynote] K-TAG and Global Collaborative Programs Hong Ryel Choi (KIAT)
1:40	[Invited] A Body-Fluid Activated Paper Biobattery Seokheun Choi (Binghamton University)
2:00	Development of A Tilt-Rotational UV-LED Lithography for 3D Microstructures Jungkwun Kim (Kansas State University)
2:20	Drop-on-demand (DOD) Inkjet Printed Microelectrodes on Flexible Substrates and its Applications Yoontae Kim (Drexel University)
2:40	[Invited] Microneedle technologies for drug delivery Seong-O Choi (Kansas State University)
3:00	77 GHz Through Glass Via (TGV) Antennas for Wireless Chip-to-Chip (C2C) Communications in 3D-SiP Seahee Hwangbo (University of Florida)

FAN Session: Current Research and Issues in Nutritional Science

Chair: Seungjoo Lee (Sejong University), Co-Chair: Yoo Kim (Harvard University)

Time	Title and Speaker
1:20	Localization and diversity of a genomic island harboring arsenic resistance genes in <i>Listeria monocytogenes</i> Sangmi Lee (NIH)
1:40	The role of BRD7 in embryo development and glucose metabolism Yoo Kim (Harvard University)
2:00	White adipocyte browning, a new mechanism of anti-obesity effect of quercetin Sang Gil Lee (North Carolina A&T State University)
2:20	[Invited] Health benefits of dietary polyphenols - role of intestinal microbiota Chang Yong Lee (Cornell University)
2:40	Perception and preferences of commercial elderly-friendly foods among elderly people at senior welfare centers in Seoul Seungjoo Lee (Sejong University)

BMP Session: Systems Biology/Informatics

Co-Chairs: Jonghwan Kim (Univ. Texas Austin), Youngseok Ju (KAIST)

Time	Title and Speaker
1:20	First somatic mutations in human life reveal asymmetric cellular dynamics in the early embryo Youngseok Ju (KAIST)
1:40	Genome evolution in the allotetraploid frog <i>Xenopus laevis</i>: A new model to study aneuploidy in human diseases Taejoon Kwon (UNIST)
2:00	A Computational Approach Identified Anti-diabetic Rosiglitazone Regulates mRNA Stability Kyoung Jae Won (UPenn)
2:20	Activity-dependent gene expression program underlying neural functions Taekyung Kim (UT Southwestern)
2:40	Non-random distribution of CpG islands directs chromosomal architectures Samuel Beck (MDI Biological Institute)

**Health and Medical
FAN**@ Ballroom B
Ballroom Level**Health and Medical
BMP**@ Washington B
Ballroom Level

**Interdisciplinary
BMP/BME**
@ Washington A
Ballroom Level

Interdisciplinary BMP/BME Session: Exosome Biology and Engineering for Medicine
Co-Chairs: Chulhee Choi (KAIST), Bong Hwan Sung (Vanderbilt University)

Time	Title and Speaker
1:20	Exosome secretion promotes directional migration of cancer cells in a gradient of chemoattractant Bong Hwan Sung (Vanderbilt University)
1:40	Feto-Placental Exosomes in Parturition: Characterization, Trafficking and Functional Role Ramkumar Menon (University of Texas Medical Branch at Galveston)
2:00	Increased CYP2E1 and P450 isoforms in exosomes of alcohol-exposed rodents and human alcoholics via oxidative and ER stress Young Eun Cho (NIH/NIAAA)
2:20	Inhibition of exosome secretion in cancer cells by a drug Moon-Chang Baek (Kyungpook National University)
2:40	Harnessing intercellular transfer of exosomes to improve drug delivery Ji-Ho Park (KAIST)
3:00	Exosome engineering for protein delivery via optogenetic approach Chulhee Choi (KAIST)

**Interdisciplinary
BMP/BME**
@ Arlington
3rd Floor

Interdisciplinary BMP/BME Session: Speed Talk

Co-Chairs for BME: YongTae Kim (Georgia Tech), Kyung-Ho Roh (U of Alabama in Huntsville)

Co-Chairs for BMP: Changwon Park (Emory University), Sang-Ho Lee (Emory University), Ji Woong Han (Emory University)

Time	Title and Speaker
1:30	Tissue-engineered Skeletal Muscle for Studying Atrophy in Space Peter Lee (Ohio State University)
1:45	Force-Transmission in Nascent Adhesions with Associations of Talin, Vinculin and Paxillin Sangyoon Han (UT Southwestern)
1:50	Nano-Plasmonic Exosome (nPLEX) Analysis for Molecular Diagnostics Hyungsoon Im (MGH, Harvard Medical School)
1:55	Actively Controlled Zonation of Primary Rat/Human Hepatocytes in Various Liver Metabolisms Using a Gradient Microfluidic Device Jinsu Eo (MGH, Harvard Medical School)
2:00	Identification of the common regulatory network Man-Sun Kim (Chungnam National University)
2:05	Non-invasive Optical Imaging of Multiple Myeloma Bone Disease by Targeting Collagen Degradation Ikjae Shin (UAMS)
2:10	Stargazer: a program for calling star alleles with structural variation for pharmacogenes from next-generation sequencing data using CYP2D6 as a model Seung-been Lee (University of Washington)
2:20	Therapeutic Approach using MRI-guided Focused Ultrasound for Biothreats Ji Hyun Lee (Uniformed Services University)
2:35	CYP2E1 regulation of alcohol-induced miRNAs Je-Hyun Yoon (Medical University of South Carolina)
2:40	Critical Role of Histone Deacetylase 3 for Acute Adaptive Thermogenesis in Brown Adipose Tissue Hee-Woong Lim (Univ. Penn)
2:45	Clq regulates macrophage polarization and inflammation resolution Myoungsun Son (Northwell)
2:50	Axonal Transport Defects in Drosophila Model of C9-ALS Hyun Sung (JHMI)

AUGUST 10, THURSDAY, 3:40 – 5:40PM**SPONSOR &
KSEA FORUMS**

Forum Name	Location	Full Description
BIO ECONOMY II Drug Development & Approval II	Fairfax, 3F	p.72
CJ (CheilJedang)	Kennedy, 3F	p.74
FINE PARTICULATE MATTER	Conference Theater, Ballroom Level	p.76
KHU (Kyung Hee University)	Roosevelt, 3F	p.83
LG ELECTRONICS	Jefferson, 3F	p.84
PARTICLE ACCELERATOR	Lincoln, 3F	p.86
YGPF (Young Generation and Professional Forum)	Tidewater II, 2F	p.91

**Interdisciplinary
CHM/CHE**
@ Potomac VI
Ballroom Level**Interdisciplinary CHM/CHE Session: Advanced Polymeric and Nanomaterials 3 :
Nanostructures for Energy Application**

Chair: Sohee Jeong (Korea Institute of Machinery and Materials)

Time	Title and Speaker
3:40	Top-Down Synthesis of New Aluminosilicate Nanostructures from Sustainable Geopolymer Chemistry Dong-Kyun Seo (Arizona Sate University)
4:05	Novel Plasmonic Nanoarchitectures for Efficient Solar Energy Conversion Platform Sangwoo Han (KAIST)
4:30	Growth and Applications of Hexagonal Boron Nitride Hyeon Suk Shin (UNIST)
4:55	Nanospace-confined solid-state conversion chemistry: Solid-state route toward colloidal hollow nanoreactor system In Su Lee (POSTECH)
5:20	Liquid Phase Transmission Electron Microscopy for Direct Observation of Nano-crystal Chemistry Jungwon Park (Seoul National University)

**Interdisciplinary
CHM/CHE**
@ Potomac V
Ballroom Level**Interdisciplinary CHM/CHE Session: Advanced Polymeric and Nanomaterials 4
: Advanced Nanomaterial Manufacturing Technologies for Energy and Organic Electronics**

Chair: Younjin Min (University of Akron), Co-chair: Jinwoo Lee (POSTECH)

Time	Title and Speaker
3:40	Development of new materials and processes for perovskites solar cells Taiho Park (POSTECH)
4:05	Designing Redox-Active Organic Electrodes for Electrochemical Energy Storage Applications Seung Woo Lee (Georgia Institute of Technology)
4:30	Facile preparation of various uniform nanoparticles through solventless processes Yuanzhe Piao (Seoul National University)
4:55	Stable bulk heterojunction based on conjugated polymer and fullerene Kyungkun Kim (Ewha Womens University)

**Interdisciplinary
MAS/BME/BMP**

@ Tidewater I
2nd Floor

5:20	Large-Scale Synthesis of Quantum Dots for Energy and Biological Applications Jongnam Park, Hyunhong Kim, Eunbyul Bang, and Yonghoon Choi (UNIST)
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Interdisciplinary MAS/BME/BMP Session: Mathematical Aspects of Biology and Biomedical Engineering: Modeling, Simulation, and Analysis

Chair: Yeona Kang (Cornell), Co-Chair: In-Hyun Park (Yale)

Time	Title and Speaker
3:40	[Invited] Comparison to in vivo Image Analysis Techniques to Confirm Abnormal Microglial Activation in Multiple Sclerosis Yeona Kang (Cornell Univ)
4:00	Social status-dependent habituation in zebrafish Choongseok Park (NC A&T State Univ) & Sungwoo Ahn (East Carolina Univ)
4:20	A computational study on the mechanism of Epithelial cell polarization during the cell division Myles Kim (Florida Polytechnic Univ)
4:40	A Mathematical Model of Calcium Crosstalk between the ER and Mitochondria Jung-Min Han (National Institute of Health)
5:00	A Mathematical Structure of Diabetes on a Slow Manifold Joon Ha (National Institute of Health)
5:20	Polymorphic transformation of rotating bacterial flagella in a viscous fluid Sookkyung Lim (Univ of Cincinnati)

**Engineering
MSE**

@ Prince William
3rd Floor

MSE Session: Frontiers of Materials Science - II

Chair: Gwan-Hyoung Lee (Yonsei University)

Time	Title and Speaker
3:40	[Invited] Plasmon Hybridization in Self-Assembled 3D Graphene Nano-structures Jeong-Hyun Cho (University of Minnesota)
4:10	Functionalization and Dispersion Stability Study of Graphene Materials Melissa Wunch (University of Texas at Dallas)
4:30	[Invited] Novel contact strategy for two-dimensional materials Younghun Jung (Columbia University)
5:00	[Invited] Observation of bright visible light emission from electrically bi-ased 2D materials heterostructures devices Sanghoon Chae (Columbia University)
5:30	Diffusion and Defect Nature in Solid Jong-Hee Park (The Electrochemical Engine)

**Interdisciplinary
MAN/MSE**

@ Arlington
3rd Floor

Interdisciplinary MAN/MSE Session: Nano-Micro Fabrication for Energy/Material

Chair: Seok-min Kim (Chung-Ang Univ.)

Time	Title and Speaker
3:40	Modeling and analysis of segmented thermoelectric generator performance considering parasitic losses Heonjoong Lee (Virginia Polytechnic Institute and State University)
3:55	Membraneless Water Filtration using CO₂ Sangwoo Shin (University of Hawaii at Manoa)
4:10	[INVITED] An integrated microfluidic processor for space exploration Jungkyu Kim (Texas Tech University)

4:30	From nanofibrils to nanosheets, mechanical characterization of amyloid biomaterials using molecular scale simulations Gwonchan Yoon (Texas Tech University)
4:45	Electrostatically Actuated Microshutter Array for Space Exploration Kyo-won Kim (NASA)
5:00	Fiber Optic Sensor for Sensing Carbon Dioxide Gas Martin Byung-Guk Jun (University of Victoria / Purdue University)
5:15	Fabrication of glass molded microfluidic devices with vitreous carbon mold Seok-min Kim (Chung-Ang University)

**Interdisciplinary
CEA/CIT**
@ Potomac I
Ballroom Level

Interdisciplinary CEA/CIT Session: Connected and Automated Vehicles (CAV-2)

Chair: Joyoung Lee (NJIT), Co-Chair: Eonsoo Lee (NJIT)

Time	Title and Speaker
3:40	[Invited] Distributed Intersection Management Protocol for Driver's Safety, Efficiency, and Comfort Guiling Wang (NJIT)
4:20	Study on Infraless Authentication for Inter-Vehicular Communications Yu Seung Kim (Ford Motors)
4:40	Integrated Simulation Framework for Evaluating Safety Performance of Connected and Automated Vehicles Lian Cui (University of Virginia)
5:00	Older Adult Crashes Associated with Roadway Features Jun-Seok Oh (Western Michigan University)
5:20	Multi-Objective Optimization Framework for Cooperative and Automated Vehicle Platooning Eonsoo Lee (NJIT)

**Interdisciplinary
CEA/CIT**
@ Washington B
Ballroom Level

Interdisciplinary CEA/CIT Session: Smart City

Chair: Soolyeon Cho (NCSU)

Time	Title and Speaker
3:40	[Invited] Shared Autonomous Electric Mobility for Smart Cities Donna Chen (University of Virginia)
4:20	Assessment of Roadway Reservation System towards Smart City Brian Park (University of Virginia)
4:40	Before Sunrise or Before Midnight? Tackling Temporally Uncertain Contextual Effects in Measuring Nighttime Urban Vitality Young-Long Kim (Clark University)
5:00	Characteristics of Artificial Intelligence Algorithms in Building Systems Yeobeom Yoon (North Carolina State University)
5:20	Adaptive Façade: Smart Building for Improved Energy Efficiency and Human Comfort Majd Hijazi (North Carolina State University)

**Engineering
CEA**

@ Potomac III
Ballroom Level

CEA Session: : Infrastructure Resilience II

Chair: Chungwook Sim (University of Nebraska-Lincoln), Co-Chair: Hyungchul Yoon (Michigan Technological Univ.)

Time	Title and Speaker
3:40	[Invited] Designing for Mitigation of Disproportionate Collapse of Building Structures H. S. Lew (National Institute of Standards and Technology)
4:10	Numerical Study of Seismic Responses of Reinforced Concrete Piers Against Aftershocks Moochul Shin (Western New England University)
4:25	Automated Damage Evaluation for Big Visual Data Collected from Earthquake Chulmin Yeum (Purdue University)
4:40	Big Data Innovations for Aging Bridge Infrastructure Chungwook Sim (University of Nebraska-Lincoln)
4:55	A Computational Fluid Dynamics Based Design Procedure of Civil Infrastructures Donghun Yeo (National Institute of Standards and Technology)
5:10	Multiscale Approach Toward Sustainable/Resilient Civil Infrastructures Yong-Rak Kim (University of Nebraska-Lincoln)
5:25	Risk-Based Multi-Hazard Costal Community Resilience YeongAe Heo (Case Western Reserve University)

**Engineering
CEA**

@ Potomac IV
Ballroom Level

CEA Session: : Water and Environment II

Chair: Jae Hyeon Ryu (University of Idaho), Co-Chair: Dae-Hong Kim (University of Seoul)

Time	Title and Speaker
3:40	[Invited] Transitions between Uncontrolled and Controlled Free Flow in Low Head Ogee Spillway Seung Ho Hong (West Virginia University)
4:10	A Novel Nanofiber Nasal Filter (NNF) to Improve Respiratory Health Taewon Han (Rutgers University)
4:25	Integrated Mangement for E-waste Recycling in Korea Seung-Whee Rhee (Kyonggi University)
4:40	How Low Impact Sustainable Development Strategies Can Mitigate High Intensity Rainfall Events Steve Trinkaus (Trinkaus Engineering, LLC)
4:55	Two-Step Methane-Powered Microbial Fuel Cell Jaewook Myung, Bruce E. Logan (Pennsylvania State University)
5:10	Skin-temperature Driven Environmental Control Systems in a Building Joon-Ho Choi, Dongwoo Yeom (University of Sourthern California)
5:25	Sustainability Assessment of Water Infrastructure and Services in Korea Byung Kook Lee (K-Water)

**Engineering
EEC**@ Potomac II
Ballroom Level**EEC Session: Microelectronics II**

Chair: Jeong-Bong Lee (The University of Texas at Dalls)

Time	Title and Speaker
3:40	Physics based Modeling of Lithium Ion Polymer Battery and its Applications Song-Yul Choe (Auburn University)
4:00	[Invited] Flexible III-N Materials and Devices Jae-Hyun Ryou (University of Houston)
4:20	Integration of multi-color micro-LEDs for display applications Chang-Mo Kang (Gwangju Institute of Science and Technology)
4:40	Liquid Metal and Its Applications Jeong-Bong Lee (The University of Texas at Dallas)
5:00	[Invited] Plasmon Field Effect Transistor for Biomedical Sensing Platform Sung Jin Kim (University of Miami)
5:20	Energy System Optimization Using Harmony Search Zoong Woo Geem (Gachon University)

**Interdisciplinary
BMP/BME**@ Washington A
Ballroom Level**Interdisciplinary BMP/BME Session: Drug Development**

Co-Chairs: Ick Chan Kwon (KIST) and Tae Gyu Lee (KBio Health)

Time	Title and Speaker
3:40	Welcoming remarks Kyung Sun (Chairman, Osong Medical Innovation Foundation)
3:45	Strategies for New Drug Development Tae Gyu Lee (Director, New Drug Development Center, KBio Osong Medical Innovation Center)
4:10	Molecular Imaging with Theragnostic Nanoparticles Ick Chan Kwon (KIST)
4:35	Alternative (non-animal) methods in hepatotoxicity using 3D cell culture Sanghun Kim (KIST)
5:00	The Development of Coronary Artery Stents in CNUH: Introduction of National Cardiovascular Center Youngkeun Ahn (Chonnam National University Hospital)
5:25	MicroRNA Inhibitors in Nanoparticles as Targeted Therapeutics for Atherosclerosis Hanjoong Jo (Emory and Georgia Tech)

AUGUST 11, FRIDAY, 8:00 – 9:40AM

SPONSOR & KSEA FORUMS

Basic Science PHY

@ Potomac I
Ballroom Level

Forum Name	Location	Full Description
YGPF (Young Generation and Professional Forum)	Tidewater II, 2F	p.91

PHY Session: Applied Physics

Chair: Kiyong Kim (Univ of Maryland)

Time	Title and Speaker
8:00	[Invited] High-Power Terahertz Generation, Characterization, and Applications Kiyong Kim (Univ of Maryland)
8:20	[Invited] Photonic downconversion based on antenna-integrated phase modulator Donghoon Park (Laboratory for Physical Sciences)
8:40	[Invited] Enhanced third harmonic generation via a combination of plasma defocusing and fifth-order nonlinearity Bonggu Shim (Binghamton University)
9:00	[Invited] Micro/Nano-Structured On-Chip Photonics: All-Dielectric Metamaterials and Frequency Comb Generation Sangsik Kim (National Institute of Standards and Technology)
9:20	[Invited] In-Situ Coherent Raman Imaging of Polymers and Complex Materials Young Jong Lee (National Institute of Standards and Technology)

Basic Science CHM

@ Potomac VI
Ballroom Level

CHM Session: Biological and Soft Materials II

Chair: Tae-Hee Lee (Penn State University)

Time	Title and Speaker
8:00	Novel nano-reaction chamber for quantitative measurements of transient macromolecular dynamics in real-time Minjoung Kyoung (University of Maryland Baltimore County)
8:25	Surface Assembly Configurations and Packing Preferences of Various Proteins on Block Copolymer Nanodomains Jong-in Hahm (Georgetown University)
8:50	Stimuli-responsive nanomedicine for anticancer therapy Won Jong Kim (POSTECH)
9:15	Single-Particle-Tracking Imaging of UCNPs (UpConverting NanoParticles) as an Ideal Bio Imaging Probe in a Single Live Cell Young Doug Suh (Koran Research Institute of Chemical Technology)

Basic Science MAS

@ Tidewater I
2nd Floor

MAS Session: Numerical Methods I

Chair: Seungil Kim (Kyung Hee Univ) , Co-Chair: Eun-Hee Park (Kangwon National Univ)

Time	Title and Speaker
8:00	[Invited] Error analysis of a PML-FEM approximation for the Helmholtz equation in waveguides Seungil Kim (Kyung Hee Univ)
8:20	Exponential Polynomial based Sharpness Indicator for Dental Tomosynthesis Imaging Yeon Ju Lee (Korea Univ)
8:40	A Non-overlapping Domain Decomposition Method for Heterogeneous Elliptic Problems Eun-Hee Park (Kangwon National Univ)
9:00	A Mathematical Insight into Electroporation Jane HyoJin Lee (Stonehill College)

9:20	[Invited] Frequency Differential Electrical Impedance Tomography Sungwhan Kim (Hanbat Univ)
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Engineering CHE

@ Potomac V
Ballroom Level

CHE Session: Computational and Theoretical Approaches in Chemical Engineering
Chair: Seok-Jhin Kim (Oklahoma State University), Co-chair: Hyunmin Yi (Tufts University)

Time	Title and Speaker
8:00	PDU scale demonstration of Renewable Natural Gas Production Using Steam Hydrogasification Chan Park (University of California Riverside)
8:25	[Invited] Analysis on Morphology of Adipic Acid Crystals from Aqueous Solution Won Bo Lee (Seoul National University)
8:55	[Invited] Multiscale Modeling of Multicompartment Micelle Nanoreactors Seung Soon Jang (GeorgiaTech)
9:20	[Keynote] Correlating Chemical Physics at Different Length Scales: Its importance to Colloidal Interactions and Slurry Rheology Jaehun Chun (Pacific Northwest National Laboratory)

Engineering CIT

@ Potomac IV
Ballroom Level

CIT Session: Digital Experience, Education, and Entertainment

Chair: Si Jung Kim (Univ of Nevada, Las Vegas)

Time	Title and Speaker
8:00	[Invited] The High Roller - A Las Vegas STEAM Paper Folding Si Jung Kim (University of Nevada, Las Vegas)
8:20	Scaling the Production of Complex Data Visualization Using Visual Programming Daniel Eun (Pegasystems)
8:40	Managing Online Disinhibition with Identity Communication Hyerin Kim (University of Texas at Austin)
9:00	A Study of Challenges and Practices with Undergraduate Capstone Projects Sook Ha (Virginia Military Institute)
9:20	Teaching HPC and Big Data to non-CS students in Liberal Arts Colleges Jeho Park (Harvey Mudd College)

Engineering MSE

@ Prince William
3rd Floor

MSE Session: Materials Engineering - I

Chair: YeonWoong Jung (University of Central Florida)

Time	Title and Speaker
8:00	[Invited] Effect of Gamma-Ray Irradiation on AlGaIn/GaN HEMTs Minseo Park (Auburn University)
8:30	Origin of the wet chemical resistance in silicon nitride films Harrison Kim (University of Texas at Dallas)
8:50	Anodized Stainless Steel for Omniphobicity and Anti-corrosion Junghoon Lee (Stevens Institute of Technology)
9:10	[Invited] Effects of Ultrasonic Treatments on the Adhesion of Electroless Copper Plating on Non-Conductive Substrate Jae-Ho Lee (Hongik University)

**Engineering
MAN**
@ Arlington
3rd Floor

MAN Session: Micro-Nano-Measurement/Control & Speed Talk for Poster

Chair: Keunhan (Kay) Park (University of Utah)

Time	Title and Speaker
8:00	Contact-Dependent Balance Stability of Biped Systems Joo Hyun Kim (New York University)
8:15	[Invited] Quantitative assessment of human gait patterns using dynamical tools Kiwon Park (Trine University)
8:35	Internal Resonances Realized in a Geometrically Nonlinear Microbeam-Polymer System Hanna Cho (The Ohio State University)
8:50	Development of Test Simulator for Fuel Quantity Measurement Bonggyun Kim (Korea Aerospace University)
9:05	Thickness Dependence of Refractive Index of Compressed Polydimethylsiloxane Iltai (Isaac) Kim (Texas A&M University–Corpus Christi)
9:20	<ul style="list-style-type: none"> • Design of a Swimming Robot based on Reaction Wheel Control Jinseong Lee (University of Maryland) • Splint Design for a Piezoelectric Cardiovascular Sensor for Detecting Intradi-alytic Hypotension Danielle Park (University of Michigan) • Thermal conductivity measurement with pipette thermal sensor Ramesh Shrestha (University of North Texas) • Polymer-based Flexible Capacitive Pressure Sensor for Urodynamic Study Hyeonu Heo • Operating Characteristics and Thermal Performance of Pump-Assisted Capil-lary-Driven Two-Phase Loop Chanwoo Park (University of Missouri) • Remote laser drilling of alumina ceramic for microelectronics Dongkyoung Lee (Kongju National University)

**Engineering
CEA**
@ Potomac III
Ballroom Level

CEA Session: Speed Talk

Chair: Boo-Hyun Nam (University of Central Florida), Co-Chair: Byoung Hooi Cho (Samsung C&T)

Time	Title and Speaker
8:00	<ul style="list-style-type: none"> • Rainfall Spatial Distribution Effect on Determining Rainfall Spatial Resolu-tion for Runoff Prediction Dae-Hong Kim (University of Seoul) • Application of NASA LIS to flood and drought indicators in East Asia and Ko-reas through improved fidelity under flood agriculture conditions Dohyuk Kang • Succession of Microbial Populations Linked to Surface Residual Ball Deg-radation in Pensacola Beach Sands Impacted by the Deepwater Horizon Oil Spill Boryoung Shin (Georgia Tech.) • Treatment Performance of Direct Contact Membrane Distillation for Broad Spectrum of Organic Contaminants in Water Danbi Won (University of Wash-ington) • Challenges and Opportunities of Estimating Traffic Measures using Low-Cost WiFi Readers Seunghan Ryu (University of Virginia) • Individual Route Choice Behavior Modeling Bingrong Sun (University of Vir-ginia) • Geohazard Mapping of Rural Areas in East Central Florida Yongje Kim (Uni-versity of Central Florida) • FE model of support layers to reasonably predict behavior of CRCP Byoung Hooi Cho (Samsung C&T) • Application of polyacrylamide solution for soil remediation Jungyeon Jang (LSU) • Advanced elastostatic technologies for sampling airborne biological particles Taewon Han (Rutgers University)

8:00	<ul style="list-style-type: none"> • Effects of Roadside Distractors on Performance of Drivers with and without Attention Deficit Tendencies Sung Jun Park (Georgia Tech.) • A Framework for Accurate Premium Cost Estimation for Green Buildings Joseph Kim (California State University, Long Beach) • Soft Micromotors for Photodegradation Junghoon Yeom (Michigan State University) • Determination of Dynamic Modulus of Hot Mix Asphalt (HMA) Kang-Won Lee (University of Rhode Island) • Deactivation of Sulfide Oxidizing Bacteria to Prevent Sewer Corrosion/Collapse/Explosion Choonghee Rhee (Standard Testing and Engineering, Inc.) • Seismic Design Optimization of Base-Isolated Systems with Hysteretic Dampers Woobin Tark (University of Illinois at Urbana-Champaign) • Comparison of Emergency Management Systems in the U.S. and S. Korea Boohyun Nam (University of Central Florida) • Computational Study of Backward Extrusion Process using FEM Yooseob Song (LSU) • Environmental Impacts of Concrete incorporated with MSWI (Municipal Solid Waste Incineration) ashes Jinwoo An (University of Central Florida) • Separation Characteristics of Ions and Natural Organic Matter in Electrodialysis Soyoon Kum (University of Texas at Austin) • Nitrate Removal from Water by Zero-valent Iron-supported Mixed Cultures Inyoung Kim (University of Delaware) • Automatic Construction using Slip-form System Bongyoung Yoo (Parsons Corporation) • Validation of Digital Image Correlation to BEAST Health Monitoring Sun Ho Ro (Rutgers University) • Environmental Impact Assessment for Evaluating Traffic Calming Measures Shinhye Joo (Western Michigan University) • Interactive control of a flying robot for automated bridge inspection Kwanghee Won (University of Nebraska-Lincoln) • Application of polyacrylamide solution for soil remediation Jungyeon Jang (LSU) • Developing an Energy Harvesting System Using Piezoelectric Wafer Boxes in Roadway Materials Seonghoon Kim (Georgia Southern University) • Evaluating Key Factors That Affect Route Choice Characteristics of Owner-Operated Trucks in Southern California Freeways Joseph Kim (California State University, Long Beach) • Stability of Dike with EPS Geofoam Core during a High Flood Event Sochan Jung (Fugro USA Land, Inc.) • Electricity Generation from Oily Wastewater using Microbial Fuel Cells (MFCs) Woo Hyoung Lee (University of Central Florida) • Vehicle Recognition and Classification Model to Estimate Individual Vehicle's Energy Consumption and Emissions Daejin Kim (Georgia Tech.) • Development of Water Hazard information platform using Satellite, Radar, AWS HyoSok Chae (K-Water)
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**Health and Medical
FAN**
@ Fairfax
3rd Floor

FAN Session: Nutrition and Food Science in Modern Foods

Chair: YeonWoong Jung (University of Central Florida)

Time	Title and Speaker
8:00	<ul style="list-style-type: none"> Comparison of 6-n-propylthiouracil (PROP) Sensitivity, Sweet Taste Preference, and Sweet Food Intakes Between Meat Eaters and Non-Meat Eaters Sung Eun Choi (Queens college, CUNY) Vitamin A and protein kinase C in the regulation of respiration and mitochondrial energy homeostasis Youn-Kyung Kim (Rutgers University) Arctigenin possesses anti-adipogenic and anti-cancer activities through modulating β-catenin expression Jihye Lee (University of Maryland) An impact of Plant the Seed on healthy eating among sixth grade students Yeon Bai (Montclair State University) Molecular characteristics, biofilm-forming abilities, and quorum sensing molecules in <i>Vibrio parahaemolyticus</i> strains isolated from marine and clinical Sangdo Ha (Chung Ang University) Metal transporter ZIP14 (SLC39A14) expression in murine skeletal muscle is influenced by inflammatory responses Jinhee Kim (University of Florida) High-throughput CNT Print-Transistor for Protein Analysis Saeyoung Ahn (NDD, Inc and AICT of Seoul National University)
8:20	Defining gu-soo perception in Doenjang (fermented soybean paste) using consumer tests with limited sensory modality and instrumental analysis Mina Kim (Chonbuk National University)
8:40	Mathematical Models of Emerging Infectious Diseases in the Republic of Korea Eunok Jung (Konkuk University)
9:00	Effect of in vitro Digestion on the Bioefficacy of Ginger Moonsun Yang (Alabama A&M University)
9:20	[Invited] Development of analytical method for aflatoxins and their reduction in soybean-based model systems Kwang Geun Lee (Dongguk University)

**Health and Medical
BMP**
@ Washington B
Ballroom Level

BMP Session: Diabetes

Co-Chairs: Jeonga Kim (University of Alabama at Birmingham), In-Kyun Lee (Kyungbook University)

Time	Title and Speaker
8:00	Role of PDKs in metabolic syndrome Lee In Kyu (Kyungpook National University)
8:20	FGF1 takes on new roles in metabolism and tissue homeostasis Suh Jae Myoung (KAIST)
8:40	DNA-PK promotes mitochondrial, metabolic and physical decline during aging Jay H. Chung (NIH-NHLBI)
8:55	Cell therapy for diabetic neurovascular complications Han Ji Woong (Emory University)
9:10	A small molecule that reduces obesity through browning of adipose tissue Jeong-a Kim (University of Alabama at Birmingham)
9:25	Genome Editing in hPSCs Reveals GATA6 Haploinsufficiency and a Genetic Interaction with GATA4 in Human Pancreatic Development Kihyun Lee (Cornell University)

Health and Medical BMP

@ Conference Theater
Ballroom Level

BMP Session: Cardiac biology

Co-Chairs: Hee-Cheol Cho (Emory University), Youngkeun Ahn, MD, PhD (Vanderbilt University)

Time	Title and Speaker
8:00	Heart Development and Regenerative Biology Chulan Kwon (Johns Hopkins)
8:20	Recovery of Myocardial Infarction via Unique Modulation of the Cardiac Micro-environment Youngkeun Ahn (Chonnam National University)
8:40	Reprogramming cell fates for heart repair Young-Jae Nam (Vanderbilt University)
8:55	Cardiac myocyte-fibroblast interaction and its roles in arrhythmias Bum Rak Choi (Brown University)
9:10	Hardware-free cardiac pacing with genes and cells Hee Cheol Cho (Emory University)
9:25	Multi-scale Biomimetic Human Cardiac Tissue Engineering for Disease Modeling and Drug Discovery Deok-Ho Kim (University of Washington)

Health and Medical BME

@ Washington A
Ballroom Level

BME Session: Immuno Therapies and Drug Delivery

Co-Chairs: : In-San Kim (KIST), Kyung-Ho Roh (University of Alabama in Huntsville)

Time	Title and Speaker
8:00	Engineering Artificial Lymphoid Organs and Antigen Presenting Cells for Cellular Immunotherapies Kyung-Ho Roh, (U of Alabama in Huntsville)
8:20	Anti-tumor efficacy evaluation of cytotoxic lymphocytes using microfabrication and fluorescence live cell imaging Junsang Doh (Postech)
8:40	An engineered human Fc antibody domain that combines both IgG and IgA effector functions for cancer immunotherapy Jiwon Lee (U of Texas at Austin)
9:00	Fully human antibodies to immune-oncology targets Young-Gyu Cho (Y-BIOLOGICS)
9:20	Designer vaccine nanodiscs for personalized cancer immunotherapy James Moon (U of Michigan)
9:40	Intrinsic Cancer Vaccination In-San Kim (KIST)

Health and Medical BME

@ Ballroom B
Ballroom Level

BME Session: Mechanobiology and Biotransport

Co-Chairs: : Hyunjoon Kong (UIUC), Jessie Sungyun Jeon (KAIST)

Time	Title and Speaker
8:00	Transport and Diagnostic Function of Worm-Like Superparamagnetic Iron Oxide Nanoparticle Clusters Hyunjoon Kong (UIUC)
8:20	In vitro study of human cancer cell metastasis in microfluidic platform Jessie Sungyun Jeon (KAIST)
8:40	Nuclear lamin A/C harnesses the perinuclear apical actin cables to protect nuclear morphology Dong Hwee Kim (Korea University)
9:00	Cell guiding nanoscale topography for biomedical implants Hojeong Jeon (KIST)
9:20	Microfluidic Compression Device for Mechanobiology Study of Chondrocytes Sangjin Ryu (University of Nebraska at Lincoln)
9:40	Physical properties of cellular aggregates Jennifer H Shin (KAIST)

AUGUST 11, FRIDAY, 10:00 – 12:00PM

**PLENARY
SESSION**
@ Ballroom C-F
Ballroom Level

Plenary
CHERRY MURRAY (Benjamin Peirce Professor of Technology and Public Policy and Professor of Physics in Harvard University)
HONGKUN PARK (Professor of Chemistry and Chemical Biology and of Physics in Harvard University)

AUGUST 11, FRIDAY, 11:45 – 6:00PM

**SPONSOR &
KSEA FORUMS**

Forum Name	Location	Full Description
KEIT (Korea Evaluation Institute of Industrial Technology)	Ballroom A, C-F Ballroom Level	p.78

AUGUST 11, FRIDAY, 1:20 – 3:20PM**SPONSOR &
KSEA FORUMS**

Forum Name	Location	Full Description
KHIDI (Korea Health Industry Development Institute)	Washington B, Ballroom Level	p.79
NST-KIMM-KIER Energy National Research Council of Science & Technology, Korea Institute of Machinery & Materials & Korea Institute of Energy Research)	Kennedy, 3F	p.85
SEOUL CITY	Roosevelt, 3F	p.87
SCIENCE DIPLOMACY	Jefferson, 3F	p.88
SMALL/MEDIUM BUSINESS (SMB) WORKSHOP	Ballroom B, Ballroom Level	p.89
KWiSE-KOFWST Women's Leadership in Scientific Innovation and Collaboration	Lincoln, 3F	p.90
YGPF (Young Generation and Professional Forum)	Tidewater II, 2F	p.91

**Interdisciplinary
CHM/CHE**
@ Potomac VI
Ballroom Level**Interdisciplinary CHM/CHE Session: Advanced Polymeric and Nanomaterials 5 :
Nanostructures for Energy Application**

Chair: Hyeon Suk Shin (UNIST)

Time	Title and Speaker
1:20	Nanopore battery electrodes with controlled interconnected pores Sang Bok Lee (University of Maryland)
1:50	Novel Hydroxide Ion-Conducting Aromatic Polymers for Alkaline Fuel Cell Membranes Chulsung Bae (Rensselaer Polytechnic Institute)
2:15	CO₂ Chemisorption in 1-Alkyl-3-methylimidazolium Acetate: Is It Really N-heterocyclic Carbene? Hyung J Kim (Carnegie-Mellon University)
2:40	First-Principles Density Functional Theory Modeling of Redox Potential of Organic Materials for Lithium-Ion Batteries Seung Soon Jang (George Institute of Technology)
3:05	Surface Chemistry of Ultrasmall Semiconductor Nanocrystals for Energy Applications Sohee Jeong (Korea Institute of Machinery and Materials)

**Interdisciplinary
CHM/CHE**
@ Potomac V
Ballroom Level**Interdisciplinary CHM/CHE Session: Advanced Polymeric and Nanomaterials 6 :
Materials for Energy Applications**

Chair: Seung Soon Jang (GeorgiaTech), Co-chair: Jinwoo Lee (PosTech)

Time	Title and Speaker
1:20	High-Temperature Ethane Dehydrogenation in Microporous Zeolite Membrane Reactor: Effects of Operating Conditions Seok-Jhin Kim (Oklahoma State University)
1:40	Structures, Dynamics, and Interactions of Confined Ionic Liquids at Multiple Length Scales Younjin Min (University of Akron)

2:00	Antimicrobial superhydrophilic nano structure for optical devices Donghyun Lee (Chung-Ang University)
2:25	Synthesis and Electrochemical Performance of Mesoporous Nanocomposite of Single Nano Crystalline VF3 with Carbon Black Jaekwang Kim, Taejong Paik and Songhun Yoon (Chung-Ang University)
2:50	Porous Electrocatalysts for Energy Conversion and Storage Jinwoo Lee (POSTECH)
3:15	<ul style="list-style-type: none"> • Multiple Phase Transitions in BCP Blend and Baroplastic Properties Seongjun Jo, Yonghoon Lee, Du Yeol Ryu (Yonsei University) • Thickness Dependent Thermal Behavior of Polystyrene on Chemically Identical Polymer-Grafted Films Taesuk Jun, Yeseul Shin, Du Yeol Ryu (Yonsei University) • Vertically Aligned Lamellar Microdomains of Block Copolymer Thin Film Induced by Manipulating Interfacial Interaction with Substrate Woosop Lee, Yeongsik Kim and Du Yeol Ryu (Yonsei University) • Smombie: Predictors of Distracted Walking based on the Theory of Planned Behavior Hyeseung Elizabeth Koh (University of Texas, Austin) • Characterization and verification of FRET phenomenon for Cupric ion chemosensor by the Nile red doped PSMA-PEI nanoparticles Jae Jung Park, Ki Seob Hwang, Jun-Young Lee (KITECH) • Water-Oil repellent properties of the coated paper with core-shell structured P(MMA-BA)-PFOA nanoparticles Yong Soo Kim,, Jun-Won Kook, Ki Seob Hwang, Jun-Young Lee (KITECH) • Isolation and Analysis of Farnesol from Korean Rice Wine Jiwoon Park, Soon Yeul Yi, Radmila Janjusevic, Ruben Savizky (Cooper Union) • A Preliminary Study for Recognizing Hand Gestures of Visual Communication Markers Using Kinect Jung In Koh, Tracy Hammond (Texas A&M University) • Experimental and Studies on K₂CO₃-Catalyzed Gasification Process of Ash Free Coal in a Fixed-Bed Reactor Sang-phil Yoon, Hyung-Taek Kim (Ajou University) • Rim's GreenPower Muffler system Julius J. Rim, Dean J. Rim (IMET Ltd.) • A Thermal Analysis of a Dry Storage System - TN-24P Cask Kwangheon Park (Kyung Hee University)

Basic Science MAS

@ Tidewater I
2nd Floor

MAS Session: Numerical Methods II

Chair: Hyea Hyun Kim (Kyung Hee Univ), Co-Chair: Hae-Soo Oh (University of North Carolina at Charlotte)

Time	Title and Speaker
1:20	[Invited] A staggered discontinuous Galerkin method for KdV equations Hyea Hyun Kim (Kyung Hee Univ)
1:40	An Optimization Based Domain Decomposition Method for Stochastic Optimal Control Problems Jangwoon Lee (Univ of Mary Washington)
2:00	Unconstrained Minimization for Eigenvector Estimation Yunho Kim (Ulsan National Institute of Science and Technology)
2:20	Implicitly enriched Galerkin (mapping) methods for numerical solutions of fourth order partial differential equations containing singularities Hae-Soo Oh (University of North Carolina at Charlotte)
2:40	Risk Parity and Budgeting Dongsun Lee (Ulsan National Institute of Science and Technology)
3:00	Primal-Dual Domain Decomposition Methods for the Total Variation Minimization with L1 Fidelity term Chang-Ock Lee (Korea Advanced Institute of Science and Technology)

**Engineering
CIT**
@ Potomac IV
Ballroom Level

CIT Session: AR/VR

Chair: Woontack Woo (KAIST)

Time	Title and Speaker
1:20	[Sponsor] Introduction to NAVER Labs Chongmok Park (NAVER) (Woontack Woo, KAIST)
1:30	[Invited] Digital Avatars, a second identity for VR/AR Jihun Yu (BinaryVR)
1:50	[Invited] Social Influence of Virtual Humans in Mixed Reality Applications Sin-Hwa Kang (USC)
2:10	The AR Strip: A City Based Augmented Reality Educational Curriculum Si Jung Kim (University of Nevada, Las Vegas)
2:30	Creating Virtual Culture for Museum and Art Kyungjin Yoo (University of Maryland)
2:50	Augmented Experience: Beyond Augmented Reality Woontack Woo (KAIST)
3:00 (Speed Talks)	<ul style="list-style-type: none"> • Depth Estimation of a 3D Face Model from a 2D Face Image Seong Kong (Sejong University) • “Say hello to my little friend” Towards Utilizing Social Media for Understanding Taboo Topics Albert Park (University of Utah) • Borderless Marker Detection for Augmented Reality Eun Young Ahn (Hanbat National University) • Basics of Cyber Security for Small and Medium Size Enterprises Sungyong In (Ichthus International Law PLLC) • Writing a new song using AI Taewan Ryu (Cal State University, Fullerton) • A Case Study of Reengineering a Database Application with Model-View-Controller (MVC) and 3-Layered Architecture Hong Jung (Southern Illinois University) • MVC Architecture-Driven Software Reengineering: A Case Study of Modernizing a Bank System of Java Application Yeonhoon Park (Southern Illinois University) • Methods to Computer Vision’s Madness: A Comparative Analysis of Real-Time Appearance and Feature-Based Object Recognition Techniques Bum Mook Oh (Univ of Washington) • OCL-Based Validation of Security and Timing Requirements Eunjee Song (Baylor University) • Architecture of Web Objects enabled Self-Directed Ubiquitous Learning Ilyoung Chong (Hankuk University of Foreign Studies) • So You Think You Can Dance: EEG Signal Controlled Nao Robots Sudhir Shenoy (University of Virginia)

**Engineering
MSE**
@ Prince William
3rd Floor

MSE Session: Materials Engineering - II

Chair: Jeong-Hyun Cho (University of Minnesota)

Time	Title and Speaker
1:20	3D Printing of Metallic Alloys: Alloy development research Yongho Sohn (University of Central Florida)
1:40	Volumetric Efficiency and Processing Dilemma in Multilayer Ceramic Capacitors Burtrand Lee (American Chemical Society)
2:00	Development of High Mn Steels Metallurgy for Erosion Resistant Slurry Pipeline Applications Hyunwoo Jin (ExxonMobil Research and Development Company)
2:20	Revisiting the Phase Equilibria in Al-Cu Binary System Choong-Un Kim (University of Texas at Arlington)

2:40	Simultaneous Measurement of Self- and Interdiffusion Coefficients in Metallic Alloys Yongho Sohn (University of Central Florida)
3:00	Planning Meeting for UKC 2018 MSE Symposium

Engineering MAN

@ Arlington
3rd Floor

MAN Session: Thermal/Fluid Engineering

Chair: Kiwon Park (Trine University)

Time	Title and Speaker
1:20	[Invited] Dielectrowetting Digital Microfluidics Sung Kwon Cho (University of Pittsburgh)
1:40	Dynamics of Colloidal Suspensions in Electrophoretic Deposition Jae Sung Park (University of Nebraska-Lincoln)
1:55	Industrial Gas Turbine Heat Transfer in Perspective to Aero Engine Hee-Koo Moon (Yonsei University)
2:10	Enhancement of Radiative Heat Dissipation of Aluminum Alloy by Anodizing and Sealing Junghoon Lee (Stevens Institute of Technology)
2:25	Temperature Calibrations for Surface Plasmon Resonance Temperature Sensor Chang Kyoung Choi (Michigan Technological University)
2:40	Flow Caused by Stalk Contraction of Vorticella convallaria Sangjin Ryu (University of Nebraska-Lincoln)
2:55	Experimental Investigation of Near-field Thermal Radiation between Macroscopic Quartz Plane Surfaces Keunhan Park (University of Utah)

Engineering CEA

@ Potomac III
Ballroom Level

CEA Session: Commercializable Civil Engineering Technologies

Chair: Jun-Seok Oh (Western Michigan University), Co-Chair: Yong-Rak Kim (University of Nebraska)

Time	Title and Speaker
1:20	GeoBIM based Data Integration for Smart FM Taewook Kang (KICT)
1:45	Development of Virtual Reality-based Disaster Evacuation Simulation in Underground Space Myoung-Bae Seo (KICT)
2:10	Theoretical Approach to Minimize the Disturbance of a Soil Bed in a Vacuum Chamber Jangguen Lee (KICT)
2:35	Development of Moon and Mars Environment Simulator Taeil Chung (KICT)
3:00	How to Commercialize Civil Engineering Technology Hosin "David" Lee (University of Iowa)

Engineering EEC

@ Potomac II
Ballroom Level

EEC Session: Optics/optoelectronics

Chair: Mun Seok Jeong (Sungkyunkwan University), Co-Chair: Jae-Hyun Ryou (University of Houston)

Time	Title and Speaker
1:20	[Invited] Tip enhanced nano Raman scattering imaging of 2 dimensional nanomaterials Mun Seok Jeong (Sungkyunkwan University)
1:40	Review on Energy Harvesting for Implant Devices Dong S. Ha (Virginia Tech)
2:00	Investigation of charge carrier dynamics of perovskite solar cell application Gon Namkoong (Old Dominion University)
2:20	Flexible Thin-Film Transistors and Photovoltaic Solar Cells Based on Single-Crystal-Like Semiconductors Jae-Hyun Ryou (University of Houston)
2:40	[Invited] Neural Sensing, Optogenetic Stimulation and Electrical Impedance Tomography Imaging of Fast Neural Activity in the Brain Hargsoon Yoon (Norfolk State University)
3:00	Plasmon Enhanced Upconversion for Biomedical Applications Won Park (University of Colorado Boulder)

Health and Medical FAN

@ Fairfax
3rd Floor

FAN Session: Special Session - Research, Grant, and Life in USDA

Chair: Hongsik Hwang (USDA), Co-Chair: Hye-Seon Kim (USDA)

Time	Title and Speaker
1:30	USDA special topic: USDA-NIFA research grant Steve Smith (USDA)
2:20	Primary expectations of secondary metabolites Jungmin Lee (USDA)
3:00	[Invited] Foodborne Pathogen and Toxin Detection with Nanotechnology Bosoon Park (USDA)
3:40	Comparative genomic analysis in the fungus Fusarium for production of toxins of concern to food safety Hye Seon Kim (USDA)
4:10	Development of New Antioxidant Systems for Frying Oil and Omega-3 Oils Hongsik Hwang (USDA)

Interdisciplinary BMP/BME

@ Washington A
Ballroom Level

Interdisciplinary BMP/BME Session: New Drug Discovery

Co-Chairs: Gyoonee Han (Yonsei University) and Yun H. Choe (Lucas & Mercanti, LLP)

Time	Title and Speaker
1:20	KASBP - History and Impact on Korean Pharmaceutical Industry Yun H. Choe (President of KASBP/Lucas & Mercanti, LLP)
1:40	Highly Selective Kinase Therapeutics for Patients with Genetically Defined Diseases Jong Sung Koh (CEO, GENOSCO Inc)
2:00	Discovery of Small-Molecule Ras Destabilizer through Enhancement of the β-catenin Destruction Complex Gyoonee Han (Yonsei University)
2:20	Leukotriene B4 Receptor Antagonists for the Treatment of Intractable Respiratory Diseases Yongseok Choi (Korea University)
2:40	Enabling First-in-Class Drug Discovery in the Korean Pharmaceutical Industry Taeyoung Yoon (Donga ST)

AUGUST 11, FRIDAY, 3:40 – 5:40PM

SPONSOR & KSEA FORUMS

Forum Name	Location	Full Description
BIOTECHNOLOGY	Roosevelt, 3F	p.73
NST-KIMM-KIER ENERGY National Research Council of Science & Technology, Korea Institute of Machinery & Materials & Korea Institute of Energy Research)	Kenndy, 3F	p.85
YGPF Poster Session (Young Generation and Professional Forum)	Independence A, Independence Level	p.91

Engineering CHE

@ Potomac V
Ballroom Level

CHE Session: Special Session Honoring Professor Kyu Yong Choi

Chair: Hyunmin Yi (Tufts University), Co-chair: Daeyeon Lee (UPenn)

Time	Title and Speaker
3:40	Introduction: Over Three Decades of Scholarly Excellence, Service and Wisdom – Professor Kyu Yong Choi’s Illustrious Career and Words of Wisdom Hyunmin Yi (Tufts University)
4:10	[Keynote] Bicontinuous Biphasic Liquid Emulsions for Catalysis and Separations Daeyeon Lee (UPenn)
4:30	[Keynote] Ion transport in confined porous nanostructure electrodes for high power energy storage Sang Bok Lee (University of Maryland)
4:55	[Keynote] Computational Design of Materials for Energy Storage: Recent Progress and Remaining Challenges Gyeong S. Hwang (University of Texas, Austin)
5:20	[Keynote] Transformation of Flue Gas to Valuable Energy Materials Jae W. Lee (KAIST)

Basic Science PHY

@ Independence A
Independence Level

PHY Poster Session

Chair: Kiyong Kim (University of Maryland), Co-Chair: Sung-Won Lee (Texas Tech University)

ID	Title and Speaker
PHY-P01	The High-Energy Llano Estacado Detector (HELADO) Jay Park (Texas Tech University)
PHY-P02	Investigating anomalous ultrafast energy transfer between fluorescent proteins Youngchan Kim (National Institutes of Health)
PHY-P03	Using GALPROP to Study H and He Flux Anomaly in Cosmic-Ray Data Lucy Lu (Univ of Maryland)
PHY-P04	The BACCUS Instrument R.P. Weinmann (Univ of Maryland)
PHY-P05	ISS-CREAM Housekeeping Data A.M. Moiseeva (Univ of Maryland)
PHY-P06	Decoherence dynamics of divacancy quantum bits in SiC H. Seo (Univ of Chicago)
PHY-P07	Secondary Interstellar Helium and Oxygen Distribution at Earth’s Orbit Jeewoo Park (NASA Goddard Space Flight Center)

PHY-P08	Automated Instrument Network for Coordinated Geospace Observations at Remote Antarctic Locations Hyomin Kim (New Jersey Institute of Technology)
PHY-P09	Full-Wave Modeling of Ultra-low Frequency Magnetospheric Waves Eun-Hwa Kim (Princeton Univ)
PHY-P10	Single-shot Capture of Ultrafast Laser-induced Plasma through Spatial Division Sarang Yeola (Univ of Maryland)

CHM Poster Session

Chair: Dong Hee Son (Texas A&M University)

ID	Title and Speaker
CHM-P01	Separation of Synthetic Peptides and Proteins by Open Tubular Capillary Electro-chromatography Ashraf Ali (Inha University)
CHM-P02	Protein Hydration study using dissolution DNP-NMR Jihyun Kim (Texas A&M University)

CHE Poster Session

Chair: Jeongwoo Lee (UMass Amherst), Co-chair: Seokjhin Kim (OSU)

ID	Title and Speaker
CHE-P01	Multiple Phase Transitions in BCP Blend and Baroplastic Properties <u>Seongjun Jo</u> , Yonghoon Lee, Du Yeol Ryu (Yonsei University)
CHE-P02	Thickness Dependent Thermal Behavior of Polystyrene on Chemically Identical Polymer-Grafted Films <u>Taesuk Jun</u> , Yeseul Shin, Du Yeol Ryu (Yonsei University)
CHE-P03	Vertically Aligned Lamellar Microdomains of Block Copolymer Thin Film Induced by Manipulating Interfacial Interaction with Substrate <u>Wooseop Lee</u> , Yeongsik Kim and Du Yeol Ryu (Yonsei University)
CHE-P04	Smombie: Predictors of Distracted Walking based on the Theory of Planned Behavior Hyeseung Elizabeth Koh (University of Texas, Austin)
CHE-P05	Characterization and verification of FRET phenomenon for Cupric ion chemosensor by the Nile red doped PSMA-PEI nanoparticles Jae Jung Park, Ki Seob Hwang, <u>Jun-Young Lee</u> (KITECH)
CHE-P06	Water-Oil repellent properties of the coated paper with core-shell structured P(MMA-BA)-PFOA nanoparticles Yong Soo Kim, Jun-Won Kook, <u>Ki Seob Hwang</u> , Jun-Young Lee (KITECH)
CHE-P07	Isolation and Analysis of Farnesol from Korean Rice Wine Jiwoon Park, Soon Yeul Yi, Radmila Janjusevic, Ruben Savizky (Cooper Union)
CHE-P08	A Preliminary Study for Recognizing Hand Gestures of Visual Communication Markers Using Kinect <u>Jung In Koh</u> , Tracy Hammond (Texas A&M University)
CHE-P09	Experimental and Studies on K₂CO₃-Catalyzed Gasification Process of Ash Free Coal in a Fixed-Bed Reactor Sang-phil Yoon , Hyung-Taek Kim (Ajou University)
CHE-P10	Rim's GreenPower Muffler system <u>Julius J. Rim</u> , Dean J. Rim (IMET Ltd.)
CHE-P11	A Thermal Analysis of a Dry Storage System - TN-24P Cask Kwangheon Park (Kyung Hee University)

**Basic Science
CHM**@ Independence A
Independence Level**Engineering
CHE**@ Independence A
Independence Level

Engineering CIT

@ Independence A
Independence Level

CIT Poster Session

Chair: : Eunjee Song (Baylor University)

ID	Title and Speaker
CIT-P01	Depth Estimation of a 3D Face Model from a 2D Face Image Seong Kong (Sejong University)
CIT-P02	“Say hello to my little friend” Towards Utilizing Social Media for Understanding Taboo Topics Albert Park (University of Utah)
CIT-P03	Borderless Marker Detection for Augmented Reality Eun Young Ahn (Hanbat National University)
CIT-P04	Basics of Cyber Security for Small and Medium Size Enterprises Sungyong In (Ichthus International Law PLLC)
CIT-P05	Writing a New Song Using AI Taewan Ryu (Cal State University, Fullerton)
CIT-P06	A Case Study of Reengineering a Database Application with Model-View-Controller (MVC) and 3-Layered Architecture Hong Jung (Southern Illinois University)
CIT-P07	MVC Architecture-Driven Software Reengineering: A Case Study of Modernizing a Bank System of Java Application Yeonhoon Park (Southern Illinois University)
CIT-P08	Methods to Computer Vision’s Madness: A Comparative Analysis of Real-Time Appearance and Feature-Based Object Recognition Techniques Bum Mook Oh (Univ of Washington)
CIT-P09	OCL-Based Validation of Security and Timing Requirements Eunjee Song (Baylor University)
CIT-P10	Architecture of Web Objects enabled Self-Directed Ubiquitous Learning Ilyoung Chong (Hankuk University of Foreign Studies)
CIT-P11	So You Think You Can Dance: EEG Signal Controlled Nao Robots Sudhir Shenoy (University of Virginia)

MAN Poster Session

Chairs: Chang Kyoung Choi (Michigan Technological University), Keunhan (Kay) Park (University of Utah), & Seokmin Kim (Chung-Ang University)

ID	Title and Speaker
MAN-P01	Design of a Swimming Robot based on Reaction Wheel Control Jinseong Lee (University of Maryland)
MAN-P02	Splint Design for a Piezoelectric Cardiovascular Sensor for Detecting Intradiastolic Hypotension Danielle Park (University of Michigan)
MAN-P03	Thermal conductivity measurement with pipette thermal sensor Ramesh Shrestha (University of North Texas)
MAN-P04	Polymer-based Flexible Capacitive Pressure Sensor for Urodynamic Study Hyeonu Heo
MAN-P05	Operating Characteristics and Thermal Performance of Pump-Assisted Capillary-Driven Two-Phase Loop Chanwoo Park (University of Missouri)
MAN-P06	Remote laser drilling of alumina ceramic for microelectronics Dongkyoung Lee (Kongju National University)

Engineering MAN

@ Independence A
Independence Level

Engineering CEA

@ Independence A
Independence Level

CEA Poster Session

Chair: Boo-Hyun Nam (University of Central Florida), Co-Chair: Byoung Hooi Cho (Samsung C&T)

ID	Title and Speaker
CEA-P01	Rainfall Spatial Distribution Effect on Determining Rainfall Spatial Resolution for Runoff Prediction Dae-Hong Kim (University of Seoul)
CEA-P02	Application of NASA LIS to flood and drought indicators in East Asia and Korea through improved fidelity under flood agriculture conditions Dohyuk Kang
CEA-P03	Succession of Microbial Populations Linked to Surface Residual Ball Degradation in Pensacola Beach Sands Impacted by the Deepwater Horizon Oil Spill Boryoung Shin (Georgia Tech.)
CEA-P04	Treatment Performance of Direct Contact Membrane Distillation for Broad Spectrum of Organic Contaminants in Water Danbi Won (University of Washington)
CEA-P05	Challenges and Opportunities of Estimating Traffic Measures using Low-Cost WiFi Readers Seunghan Ryu (University of Virginia)
CEA-P06	Individual Route Choice Behavior Modeling Bingrong Sun (University of Virginia)
CEA-P07	Geohazard Mapping of Rural Areas in East Central Florida Yongje Kim (University of Central Florida)
CEA-P08	FE model of support layers to reasonably predict behavior of CRCP Byoung Hooi Cho (Samsung C&T)
CEA-P09	Application of polyacrylamide solution for soil remediation Jungyeon Jang (LSU)
CEA-P10	Advanced elastostatic technologies for sampling airborne biological particles Taewon Han (Rutgers University)
CEA-P11	Effects of Roadside Distractors on Performance of Drivers with and without Attention Deficit Tendencies Sung Jun Park (Georgia Tech.)
CEA-P12	A Framework for Accurate Premium Cost Estimation for Green Buildings Joseph Kim (California State University, Long Beach)
CEA-P13	Soft Micromotors for Photodegradation Junghoon Yeom (Michigan State University)
CEA-P14	Determination of Dynamic Modulus of Hot Mix Asphalt (HMA) Kang-Won Lee (University of Rhode Island)
CEA-P15	Deactivation of Sulfide Oxidizing Bacteria to Prevent Sewer Corrosion/Collapse/Explosion Choonghee Rhee (Standard Testing and Engineering, Inc.)
CEA-P16	Seismic Design Optimization of Base-Isolated Systems with Hysteretic Dampers Woobin Tark (University of Illinois at Urbana-Champaign)
CEA-P17	Comparison of Emergency Management Systems in the U.S. and S. Korea Boohyun Nam (University of Central Florida)
CEA-P18	Computational Study of Backward Extrusion Process using FEM Yooseob Song (LSU)
CEA-P19	Environmental Impacts of Concrete incorporated with MSWI (Municipal Solid Waste Incineration) ashes Jinwoo An (University of Central Florida)
CEA-P20	Separation Characteristics of Ions and Natural Organic Matter in Electrodialysis Soyeon Kum (University of Texas at Austin)
CEA-P21	Nitrate Removal from Water by Zero-valent Iron-supported Mixed Cultures Inyoung Kim (University of Delaware)
CEA-P22	Automatic Construction using Slip-form System Bongyoung Yoo (Parsons Corporation)

CEA-P23	Validation of Digital Image Correlation to BEAST Health Monitoring Sun Ho Ro (Rutgers University)
CEA-P24	Environmental Impact Assessment for Evaluating Traffic Calming Measures Shinhye Joo (Western Michigan University)
CEA-P25	Interactive control of a flying robot for automated bridge inspection Kwanghee Won (University of Nebraska-Lincoln)
CEA-P26	Application of polyacrylamide solution for soil remediation Jungyeon Jang (LSU)
CEA-P27	Developing an Energy Harvesting System Using Piezoelectric Wafer Boxes in Roadway Materials Seonghoo Kim (Georgia Southern University)
CEA-P28	Evaluating Key Factors That Affect Route Choice Characteristics of Owner-Operated Trucks in Southern California Freeways Joseph Kim (California State University, Long Beach)
CEA-P29	Stability of Dike with EPS Geofoam Core during a High Flood Event Sochan Jung (Fugro USA Land, Inc.)
CEA-P30	Electricity Generation from Oily Wastewater using Microbial Fuel Cells (MFCs) Woo Hyoung Lee (University of Central Florida)
CEA-P31	Vehicle Recognition and Classification Model to Estimate Individual Vehicle's Energy Consumption and Emissions Daejin Kim (Georgia Tech.)
CEA-P32	Development of Water Hazard information platform using Satellite, Radar, AWS, HyoSok Chae (K-Water)

EEC Poster Session

Chair: Tom Oh (Rochester Institute of Technology)

ID	Title and Speaker
EEC-P01	Quantifying the Consistency of Wearable Knee Acoustical Emission Measurements During Complex Motions Hyeon Ki (Georgia Institute of Technology)
EEC-P02	3D-IC Chip Inspection Using GPU Acceleration Kyung-Chan Jin (KITECH)

FAN Poster Session

Chair: Youngmok Kim (Synergy flavors Inc.), Co-Chair: Mina Kim (Chonbuk National University)

ID	Title and Speaker
FAN-P01	Comparison of 6-n-propylthiouracil (PROP) Sensitivity, Sweet Taste Preference, and Sweet Food Intakes Between Meat Eaters and Non-Meat Eaters Sung Eun Choi (Queens College, CUNY)
FAN-P02	Vitamin A and protein kinase C in the regulation of respiration and mitochondrial energy homeostasis Youn-Kyung Kim (Rutgers University)
FAN-P03	Arctigenin possesses anti-adipogenic and anti-cancer activities through modulating β-catenin expression Jihye Lee (University of Maryland)
FAN-P04	An impact of Plant the Seed on healthy eating among sixth grade students Yeon Bai (Montclair State University)
FAN-P05	Molecular characteristics, biofilm-forming abilities, and quorum sensing molecules in <i>Vibrio parahaemolyticus</i> strains isolated from marine and clinical Sangdo Ha (Chung Ang University)
FAN-P06	Metal transporter ZIP14 (SLC39A14) expression in murine skeletal muscle is influenced by inflammatory responses Jinhee Kim (University of Florida)

Engineering EEC

@ Independence A
Independence Level

Health & Medical FAN

@ Independence A
Independence Level

FAN-P07	High-throughput CNT Print-Transistor for Protein Analysis Saeyoung Ahn (NDD, Inc and AICT of Seoul National University)
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BMP Poster Session

Co-Chairs: Changwon Park (Emory University), Sang-Ho Lee (Emory University), Ji Woong Han (Emory University)

ID	Title and Speaker
BMP-P01	CpG island-mediated mammalian gene regulations Samuel Beck (The University of Texas at Austin)
BMP-P02	Influence of Prenatal Maternal Depression on Amygdala-Prefrontal Circuits in Infant Jiook Cha (Columbia University)
BMP-P03	Intellectual Property Rights in Global R&D Collaboration Yun Choe (Lucas & Mercanti, LLP)
BMP-P04	Leukotriene B4 receptor antagonists for the treatment of intractable respiratory diseases Yongseok Choi (Korea University)
BMP-P05	Literature Identification Strategy in Toxicology Risk Assessment for Pharmaceutical Drug and Food Product Development and Marketing Byoung-Joon Song (NIH)
BMP-P06	Discovery and mechanistic investigation of novel metabolic features of lung cancer and their potentials of clinical applications Mingzhu Fang (Rutgers University)
BMP-P07	A mathematical model predicts a delayed insulin peak during an oral glucose tolerance test as a high risk factor for diabetes Joon Ha (NIH)
BMP-P08	Improving Adoptive T Cell Therapy Using Cbl-b targeted CD4+ T Cells SeongJun Han (University of Toronto)
BMP-P09	Genome wide discovery of genetic variants affecting alternative splicing patterns in human using bioinformatics method Seonggyun Han (University of Utah)
BMP-P10	Neuromodulator induced bidirectional changes in ocular dominance in the mouse primary visual cortex Su Hong (Johns Hopkins University)
BMP-P11	The Impact of Iodinated X-Ray Contrast Agents on Formation and Toxicity of Disinfection By-Products in Drinking Water Clara Jeong (University of Wisconsin)
BMP-P12	The influence of natural killer T cells during the development of childhood acute leukemia Sumin Jo (UBC)
BMP-P13	The Construction of Regulatory Network for Insulin-Mediated Genes by Integrating Methods Based on Transcription Factor Binding Motifs and Gene Express Hyeim Jung (Purdue University)
BMP-P14	Preparation for the post-graduate Residency program as a Pharm.D candidate of 2020 Jungwook Kang (Rutgers Ernest Mario School of Pharmacy)
BMP-P15	Live cell imaging as a method of evaluating Radiation-induced DNA Double Stranded Breaks (DSBs) Jamie Kang (University of Oxford)
BMP-P16	Generation of Highly Pure and Faithful Spinal Motor Neurons from Human Pluripotent Stem Cells for Amyotrophic Lateral Sclerosis and Spinal Muscular A Byung Woo Kim (JHMI)
BMP-P17	Autocrine canonical WNT signaling is activated ectopically in skin disease to control KRT9 Dongwon Kim (JHMI)
BMP-P18	Racial dependent intron retention and DNA methylation in breast cancer Dongwook Kim (University of Utah)

BMP-P19	Loss of an androgen-inactivating and isoform-specific HSD17B4 splice form enables emergence of castration-resistant prostate cancer Hyun-Kyung Ko (Cleveland Clinic)
BMP-P20	Activity-induced synaptic structural modifications by an activator of integrin signaling at the Drosophila neuromuscular junction Joo Yeun Lee (USC)
BMP-P21	Stargazer: a program for calling star alleles with structural variation for pharmacogenes from next-generation sequencing data using CYP2D6 as a model Seung-been Lee (University of Washington)
BMP-P22	Coronary artery disease in lipodystrophy Ho Lim Lee (NIH)
BMP-P23	Therapeutic Approach using MRI-guided Focused Ultrasound for Biothreats Ji Hyun Lee (Uniformed Services University)
BMP-P24	Nanotoxicity of Titanium Dioxide Nanomaterials used in Personal Care Products and Role of Fatty Acid Composites in Oxidative Stress Heayeon Lee (Northeastern University)
BMP-P25	Development of nucleic acid scavengers for the removal of pro-inflammatory and thrombotic DAMPs Jaewoo Lee (Duke University)
BMP-P26	Robustness of Regulatory Gene Circuit Under Mutation Pressure Joo-Young Lee (University of Washington)
BMP-P27	Diversity of miRNA Binding Exons in 3'-UTRs and the Correlation of miRNA-Mediated mRNA Repression vis-à-vis Clinical Outcomes in Bladder Cancer Younghee Lee (University of Utah)
BMP-P28	Critical Role of Histone Deacetylase 3 for Acute Adaptive Thermogenesis in Brown Adipose Tissue Hee-Woong Lim (Univ. Penn)
BMP-P29	Development of a sensitive and specific assay for the detection of Group C rotavirus Sungsil Moon (CDC)
BMP-P30	Brown adipocyte lipid droplet lipolysis is not required for cold-induced thermogenesis Hyunsu Shin (GSU)
BMP-P31	Non-invasive Optical Imaging of Multiple Myeloma Bone Disease by Targeting Collagen Degradation Ikjae Shin (UAMS)
BMP-P32	C1q regulates macrophage polarization and inflammation resolution Myoungsun Son (Northwell)
BMP-P33	Regulation of Endogenous MAGP2 Extracellular Matrix Binding by Enzymatic Cleavage Ann Song (Fullerton)
BMP-P34	Mechanisms of Gut Leakiness, Leading to Advanced Liver Disease in Rodents Exposed to Alcohol and Nonalcoholic Substances Byoung-Joon Song (NIH)
BMP-P35	Axonal Transport Defects in Drosophila Model of C9-ALS Hyun Sung (JHMI)
BMP-P36	CYP2E1 regulation of alcohol-induced miRNAs Je-Hyun Yoon (Medical University of South Carolina)
BMP-P37	NF-kB regulates a metabolic dysfunction in rhabdomyosarcoma Peter Yu (OSUMC)

BME Poster Session

Co-Chairs: Yongtae Kim (Georgia Tech), Kyung-Ho Roh (University of Alabama in Huntsville)

ID	Title and Speaker
BME-P01	Spectroscopic Photoacoustic Imaging with Ultra-small Plasmonic NanoSensors for Metastatic Cancer Detection Sangheon Han (Rice University)

**Health & Medical
BME**
@ Independence A
Independence Level

BME-P02	Identification of the common regulatory network Man-Sun Kim (Chungnam National University)
BME-P03	Optical imaging of cerebral microcirculation in vivo Woo June Choi (University of Washington)
BME-P04	Timing Analysis of Robotic Neuromodulatory Rehabilitation System for Paired Associative Stimulation Euisun Kim (Georgia Tech)
BME-P05	Therapeutic CRISPR-Cas9 Genome Editing for Sickle Cell Disease SoHyun Park (Rice University)
BME-P06	Microfluidic Electrochemical Sensor System for Simultaneous Biomarker Analyses Heayeon Lee (Northeastern University)
BME-P07	In vivo monitoring laser tissue interaction Daeyu Kim (Inha University)
BME-P08	Force-Transmission in Nascent Adhesions with Associations of Talin, Vinculin and Paxillin Sangyoon Han (UT Southwestern)
BME-P09	Microfluidic Cell Compression Device for Chondrocyte Mechanobiology Donghee Lee (University of Nebraska-Lincoln)
BME-P10	Planar small-angle x-ray scattering imaging of phantoms Mina So (University of Maryland)
BME-P11	Variability of leg kinematics during overground walking in persons with chronic incomplete spinal cord injury Won Joon Sohn (Emory University)
BME-P12	Innate immune sensing of a bacterial protein in the ER of the intestine by IRE1b Jin Cho (Chungnam National University)
BME-P13	Comparison of Micromechanical Models of Muscle Fibers Affected by Changes in Material Properties Kangsoo Choi (University of Utah)
BME-P14	Nano-Plasmonic Exosome (nPLEX) Analysis for Molecular Diagnostics Hyungsoon Im (MGH, Harvard Medical School)
BME-P15	Actively Controlled Zonation of Primary Rat/Human Hepatocytes in Various Liver Metabolisms Using a Gradient Microfluidic Device Young Bok Abraham Kang (MGH, Harvard Medical School)

NETWORKING DINNER

5:40 – 9:00PM

Symposium/Forum	Location
Physics	Woo Lae Oak
Chemistry	
Math/Applied Math/Statistics	
Chemical Engineering	
Computer Science & Information Technology	
Material Science & Engineering	N/A
Mechanical, Aerospace and Naval Engineering	Woo Lae Oak
Civil, Environmental, Architecture	
Electrical, Electronics and Communications	
Food, Agriculture and Nutrition	Heebeen
Bio, Medical and Pharmaceutical	Cafe Italia
Biomedical Engineering	
KWiSE	Woo Lae Oak
SMB	
KWSE	

Woo Lae Oak: 8240 Leesburg Pike, Vienna VA 22182 (703-827-7300) - *Transportation will be available in front of the main venue at 5:40pm and 6:00pm. Transportation back to the main venue will also be available at the restaurant at 9:00pm and 9:30pm.*

Cafe Italia: 519 S. 23rd St. Arlington VA 22202 (703-521-2565) - *Walking distance from the main venue.*

Heebeen: 6231 Little River Turnpike, Alexandria, VA 22312 (703-941-3737) - *UKC does not provide transportation.*

AUGUST 12, SATURDAY, 8:00 – 9:40AM

SPONSOR & KSEA FORUMS

Forum Name	Location	Full Description
SMALL/MEDIUM BUSINESS (SMB) WORKSHOP	Ballroom B, Ballroom Level	p.89
YGPF (Young Generation and Professional Forum)	Tidewater II, 2F	p.91

Basic Science PHY @ Potomac I Ballroom Level

PHY Session: Emergent Physics

Chair: Harold Kim (Georgia Institute of Technology)

Time	Title and Speaker
8:00	[Invited] The physics of DNA strand displacement Harold Kim (Georgia Institute of Technology)
8:15	[Invited] Single molecule biophysical investigations on noncanonical DNA structures Seok-Cheol Hong (Korea University)
8:30	[Invited] Visualizing DNA compaction by SMC using singlemolecule tools Hyeongjun Kim (Harvard Medical School)
8:45	[Invited] Coffee Stains: Physics and Beyond Byung Mook Weon (Sungkyunkwan University)
9:00	[Invited] 2016 Physics Nobel Prize and Topological Insulator: Route toward resistancefree conductors Seongshik Oh (Rutgers University)
9:15	[Invited] Effect of sequence imperfection on base-triplet stepping in strand exchange by the Rad51/RecA family of recombinase Ja Yil Lee (Ulsan National Institute of Science and Technology)

Engineering CIT @ Potomac IV Ballroom Level

CIT Session: Optimization and Software Engineering

Chair: Sam Chung (Southern Illinois Univ)

Time	Title and Speaker
8:00	From Programming to DevOps in Java Sam Chung (Southern Illinois University)
8:20	Simulation of yo-yo Effect to Detect Data Flow Anomalies Jeong Yang (Texas A&M University-San Antonio)
8:35	Fast Multiplication Algorithm by Clearing Leading-zeros in Binary Numbers Donghoon Kim (Arkansas State University)
8:50	Software Reengineering a Legacy Game Application with Model-View-Controller (MVC) Architecture, Unit Testing, and Input Data Validation Shane Mueller (Southern Illinois University)
9:05	Analysis of Pathfinding Heuristics in Hybrid Charging of Rechargeable Wireless Sensor Networks Jongeun Kim (University of Florida)
9:20	Hybrid Wireless Charging Protocols in Wireless Sensor Networks Rory McDaniel and Hwajung Lee (Radford University)

Health & Medical
FAN
 @ Fairfax
 3rd Floor

FAN Session: Food Chemistry - Recent Advances and New Trends

Chair: Youngmo Yoon (Kerry flavours and ingredients), Co-Chair: Hongsik Hwang (USDA)

Time	Title and Speaker
8:00	Application of <i>Caenorhabditis elegans</i> in Food Bioactive Research on Obesity Yeonhwa Park (University of Massachusetts)
8:20	Production of Food Ingredients from Renewable Biomass by Microbial Factory Technology Yong-Cheol Park (Kookmin University)
8:40	Studies for Productivity of Essential Oils and Aroma Constituents of Citrus junos Producing Two Different Areas in Korea Gyeong Suk Jo (JARES)
9:00	[Invited] Analytical Approaches for Food and Flavor Samples by Gas Chromatography Mass Spectrometry-Olfactometry Youngmo Yoon (Kerry flavours and ingredients)

Health & Medical
BMP
 @ Washington B
 Ballroom Level

BMP Session: Immunology

Co-Chairs: Insoo Kang (Yale University), Eui-Cheol Shin (KAIST)

Time	Title and Speaker
8:00	Controlling T cell immunity by common gamma-chain cytokine receptor expression Hyun Park (NIH/NCI)
8:20	Pyrin Inflammasome Activation and RhoA Signaling in the Autoinflammatory Diseases Jae Jin Chae (NIH/NHGRI)
8:35	Triggering of macrophage activation through TLR4-NOX2 axis in nonalcoholic fatty liver disease Won-Il Jeong (KAIST)
8:50	Studying human immune cell traits using high dimensional analysis Insoo Kang (Yale University School of Medicine)
9:05	Innate-like activity of memory CD8+ T cells in viral infection Eui-Cheol Shin (KAIST)
9:20	L-27-dependent regulation of regulatory T cell function in autoimmune inflammation Booki Min (Cleveland Clinic)

Health & Medical
BMP
 @ Conference Theater
 Ballroom Level

BMP Session: Vascular Biology

Co-Chairs: Changwon Park (Emory University), Young Kwon Hong (University of Southern California)

Time	Title and Speaker
8:00	Molecular Aspect of Vascular Anomalies Ho Yun Chung (Kyungpook National University)
8:20	Role of myeloid cell in angiogenesis and response to anticancer therapies G-ONE AHN (POSTECH)
8:35	Role of BMP signaling in cardiovascular development and remodeling S. Paul Oh (University of Florida)
8:50	Molecular Basis of Flow-Induced Lymphatic Expansion Young-Kwon Hong (University of Southern California)
9:05	Transcriptional regulation of cardiovascular development and angiogenesis Changwon Park (Emory University School of Medicine)
9:20	Endothelial cell generation by direct reprogramming Sangho Lee (Emory University School of Medicine)

**Health & Medical
BME**

@ Washington A
Ballroom Level

BME Session: Biomaterials and Tissue Engineering

Co-Chairs: Hak-Joon Sung (Vanderbilt University), Gilsun Kang (Chunbuk National University)

Time	Title and Speaker
8:00	Collagen hybridizing peptide: Targeted binding and biomedical application Michael (Seungju) Yu (University of Utah)
8:20	3D printed tissue engineering using silk fibroin Chan Hum Park (Hallym University)
8:35	Shape memory external stents for vascular applications Hak-Joon Sung (Vanderbilt University/ Yonsei University)
8:50	Micro- and Nanotechnologies for Bio-Hybrid Actuator and Biosensing Applications Su Ryon Shin (Harvard-MIT Health Science & Technology)
9:05	Smart Scaffolding Based on Nature Originated Materials and Bioactive Molecules for Regenerative Medical Therapy Gilsun Kang (Chunbuk National University)
9:20	Prohealing Multifunctional Endothelium Mimic Nanomatrix Ho-Wook Jun (University of Alabama Birmingham)

AUGUST 12, SATURDAY, 10:00 – 12:00PM

**PLENARY PANEL
SESSION**

@ Ballroom C-F
Ballroom Level

Plenary Panel

Moderator: Max Han (Accenture)

Panelists:

Jennifer Lee (Department of Veterans Affairs)

Seong K Mun (Open Source Electronic Health Record Alliance)

Ryung Suh (Georgetown University)

AUGUST 12, SATURDAY, 12:00 – 1:20PM

LUNCHEON

@ Independence
Independence Level

Closing Luncheon

AUGUST 12, SATURDAY, 1:20 – 3:20PM

SPONSOR & KSEA FORUMS

Forum Name	Location	Full Description
HISTORY FORUM	Conference Theater, Ballroom Level	N/A
YGPF (Young Generation and Professional Forum)	Tidewater II, 2F	p.91

Health & Medical FAN @ Fairfax 3rd Floor

FAN Session: Processing Efficiency, Product Safety, and Quality Improvement of Agricultural Products.

Chair: Iksoon Kang (Cal Polytechnical University), Co-Chair: Sangdo Ha (Chung Ang University)

Time	Title and Speaker
1:20	Effects of low-dose Irradiation of Shell Eggs on the Physicochemical and Functional Properties of Spray-dried Egg White Powder Byungrok Min (University Maryland East Shore)
1:40	[Invited] Current concept of Biofilms for food safety and its reduction from foods and food contact surfaces Sangdo Ha (Chung Ang University)
2:00	Quantification and visualization of bacterial attachment on broiler skin using swabbing, stomaching, grinding and confocal imaging Morgan Metheny (Cal Polytechnical University)
2:20	Structural changes of potentially harmful substances in meat products during in vitro human digestion Sun Jin Hur (Chung Ang University)
2:40	Structural basis for regulation of rhizobial nodulation and symbiosis gene expression by the regulatory protein NodR Soon Goo Lee (Washington University)

AUGUST 12, SATURDAY, 3:40 – 5:40PM

SPONSOR & KSEA FORUMS

Forum Name	Location	Full Description
YGPF (Young Generation and Professional Forum)	Tidewater II, 2F	p.91

Bio Economy I	August 10, Thursday, 1:20 - 3:20 pm @ Fairfax
Bio Economy II	August 10, Thursday, 3:40 - 5:40 pm @ Fairfax
Biotechnology	August 11, Friday, 3:40 - 5:40 pm @ Roosevelt
CJ (CheilJedang)	August 10, Thursday, 1:20 - 5:40 pm @ Kennedy
Congressional Science Policy	August 10, Thursday, 1:20 - 3:20 pm @ Conference Theater
Fine Particulate Matter	August 10, Thursday, 3:40 - 5:40 pm @ Conference Theater
History Form	August 12, Saturday, 1:20 - 3:20 pm @ Conference Theater
IP (Intellectual Property)	August 10, Thursday, 1:20 - 3:20 pm @ Ballroom A
KEIT (Korea Evaluation Institute of Industrial Technology)	August 11, Friday, 11:45 am - 6:00 pm @ Ballroom A, C-F
KHIDI (Korea Health Industry Development Institute)	August 11, Friday, 1:20 - 3:20 pm @ Washington B
KIST (Korea Institute of Science and Techonology)	August 10, Thursday, 1:20 - 3:20 pm @ Lincoln
KISTI (Korea Institute of Science and Technology Information)	August 10, Thursday, 1:20 - 3:20 pm @ Jefferson
KRRI (Korea Railroad Research Institute)	August 10, Thursday, 1:20 - 3:20 pm @ Roosevelt
Kyung Hee University	August 10, Thursday, 3:40 - 5:40 pm @ Roosevelt
LG Electronics	August 10, Thursday, 3:40 - 5:40 pm @ Jefferson
NST-KIMM-KIER Energy	August 11, Friday, 1:20 - 4:40 pm @ Kennedy
RISP (Rare Isotope Science Project)	August 10, Thursday, 3:40 - 5:40 pm @ Lincoln
SBA (Seoul Business Agency)	August 11, Friday, 1:20 - 3:20 pm @ Roosevelt
Science Diplomacy	August 11, Friday, 1:20 - 3:20 pm @ Jefferson
SMB Workshop	August 11, Friday, 1:20 - 3:20 pm @ Ballroom B
KWiSE-KOFWST	August 11, Friday, 1:20 - 3:20 pm @ Lincoln
YGPF (Young Generation and Professional Forum)	August 10 - August 12 @ Tidewater II

BIO ECONOMY I

Aug. 10
Thursday
1:20 – 3:20pm

@ Fairfax
3rd Floor

DRUG DEVELOPMENT & APPROVAL I: BIOLOGICS AND BIOSIMILAR DEVELOPMENT AND APPROVAL IN THE US

Therapeutic biologics often represent cutting-edge research in which the latest scientific discoveries are translated into novel therapies that provide new treatment options for patients. Gene-based and cellular biologics, for example, often are at the forefront of biomedical research, and may be used to treat a variety of medical conditions for which no other treatments are available. Biologic development and approval have been very active, and more than one third of new drugs approved by US FDA's Center for Drug Evaluation and Research (CDER) are biologics in recent years. The Biologics Price Competition and Innovation Act (BPCI Act) created an abbreviated licensure pathway for biological products shown to be biosimilar to an FDA-licensed reference product. Unlike with generic drugs of the traditional small molecule type, biologics generally exhibit high molecular complexity, and may be quite sensitive to changes in manufacturing processes. This session will focus on the current status in novel biologic developments and the trends in biologics and biosimilar developments and its methodologies.

Topics include industry perspectives and regulatory perspectives of biologics and biosimilar developments and approvals.



Chair: Hae-Young Ahn
(Food and Drug Administration)



Co-Chair: Myeong-Hee Yu
(Korea Institute of Science and Technology)



Co-Chair: SooYoung Lee
(Celltrion Biotechnology)

Time	Title and Speaker
1:20 PM	Global View of Biosimilar and Remsima® Success Story SooYoung Lee (Celltrion)
1:50 PM	Recent CMC Trends in Biotechnology Products Development: Regulatory Perspective Jun Park (FDA)
2:20 PM	Totality of the Evidence for Biosimilarity: Clinical Considerations Nikolay Nikolov (FDA)
2:50 PM	Patent Strategies in the Biosimilar Space: Strategic Considerations in obtaining, asserting or challenging patents Joo Mee Kim (Rothwell, Figg, Ernst & Manbeck, pc)

BIO ECONOMY II

**Aug. 10
Thursday
3:20 – 5:40pm**

@ Fairfax
3rd Floor

DRUG DEVELOPMENT & APPROVAL II: HOW TO MAXIMIZE RETURN OF TIME AND EFFORT INVESTMENT IN DRUG DEVELOPMENT AND APPROVAL

Drug development & approval is known to have time and energy consuming processes with relatively slow and low return of investment while they require timely execution of multi-disciplinary decisions. Meanwhile, nature of drug development & approval becomes increasing competitive as indicated by a few statistical information related to the novel drug approved in 2016*; 95% (19 drugs) was approved in the first review cycle, 36% (8 drugs) were the first-in-class, and 73% (16 drugs) was designated in expedited development and review methods. The situation is more challenging for emerging sponsors due to limited resources and lack of experiences. The session is to share and discuss cases to facilitate drug development & approval across diverse stages in the processes for maximizing the return of time and effort investment focusing on situations with emerging sponsors.

* 2016 NOVEL DRUGS summary, US FDA, January 2017,

<https://www.fda.gov/downloads/Drugs/DevelopmentApprovalProcess/DrugInnovation/UCM536693.pdf>



Co-Chair: Sang Mok Chung
(Food and Drug Administration)



Co-Chair: Jin Sun Kim
(Hanmi Pharm Co)

Time	Title and Speaker
3:40 PM	Critical Role of Translational Sciences for the Development of Anticancer Agents Jin Sun Kim (Hanmi)
4:10 PM	Clinical Drug Development Based on Modeling & Simulations: A Tool to Increase Return of Investment Holly Kimko (Janssen R&D of Johnson & Johnson)
4:40 PM	Clinical Trials R Us: Cases of Good, Bad and Ugly Sang Mok Chung (FDA)
5:10 PM	Panel Discussions, combined Session I & II Panelists: Hae Young Ahn(FDA), Myeong-Hee Yu (KIST), SooYoung Lee (Celltrion), Jun Park (FDA), Nikolay Nikolov (FDA), Joo Mee Kim (Rothwell, Figg, Ernst & Manbeck, pc), Sang Mok Chung (FDA), Holly Kimko (Jassen R&D), Jin Sun Kim (Hanmi)

BIOTECHNOLOGY

STRATEGIES TO TACKLE INFECTIOUS DISEASES AND CANCER

Bridging cutting-edge biomedical expertise in the field of infectious diseases and cancer to achieve converged strategies



Chair: Gyoonee Han
(Yonsei University)



Co-Chair: Ji-Young Min
(Institut Pasteur Korea)

Aug. 11
Friday
3:40 – 5:40pm

@ Roosevelt
3rd Floor

Time	Title and Speaker
3:40 PM	Discovery of small molecule PPI inhibitors of Leucyl t-RNA synthetase (LRS) for modulation of m-TOR signaling pathway Gyoonee Han (Yonsei University)
4:10 PM	Induced pluripotent stem cells for drug screening and toxicity testing Wonhee Lee (Stanford University)
4:40 PM	Process excellence in the biological science Diana Noah (GlaxoSmithKline)
5:10 PM	Emerging respiratory viruses-opportunity for drug discovery in Korea Ji-Young Min (Institut Pasteur Korea)

* All the speakers in this session are the invited speakers supported by KWSE

CJ (CheilJedang)



CJ (CHEILJEDANG) FORUM

This is the third CJ Forum hosted during UKC since 2015. This year CJ Forum will include presentation competition for CJ Blossom Park Grant (CJBP Grant). A maximum of 4 teams will be selected and invited to present the proposal for the decision of final recipient.

Introduction of CJ CheilJedang & CJ Blossom Park:

The CJ CheilJedang started in 1953 as Korea's first manufacturer of sugar which is one of the basic necessities in life. For more than half a century, the company has grown remarkably by expanding our business scope to include food, feed & livestock, bio, and pharmaceutical products.

CJ Blossom Park was established in 2015 to function as a brain hub to enable sustainable growth of CJ's Research Institute by integrating research fields related to food, animal feed, bio-products and ingredients & materials.

CJ Blossom Park will play a pivotal role in making CJ a leading global company by developing innovative products using OnlyOne technologies, top-notch infrastructure, and world top-class R&D professionals.

Chairs:

Sung Woo Kim (North Carolina State University)

Yong Hwan Lee (CJ CheilJedang, HR)

Aug. 10
Thursday
1:20 – 5:40pm

@ Kennedy
3rd Floor

Time	Title and Speaker	
1:20 PM “Invitation Only”	Proposal Presentations for CJBP Grants Program 1:20~1:30 Introduction & Opening 1:30~2:00 Proposal presentation 1 2:00~2:30 Proposal presentation 2 2:30~2:50 (Break) 2:50~3:20 Proposal presentation 3 3:20~3:50 Proposal presentation 4 3:50~4:10 Summary	30 min per team • 15 min talk • 15 min Q/A
4:10 PM	Networking and Coffee Break	
4:30 PM	Welcome & Introduction of Participants	Sung Woo Kim Jae Ho Jang
4:40 PM	Introduction of CJ R&D Center	
5:10 PM	Discussion with CJ R&D Heads	
5:30 PM	Summary	

Congressional Science Policy

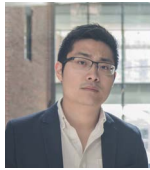
FORUM ON U.S.-KOREA NATIONAL POLICY ON THE 4TH INDUSTRIAL REVOLUTION (4차산업혁명시대를 위한 정책 포럼)

The topic to be discussed in this panel is the U.S.-Korea National Policies to promote and support the 4th industrial revolution. The panel discussion will include the very definition of an “Industrial Revolution”, the potential areas of technology that can trigger the 4th Industrial Revolution, the direction of national policies in the U.S. and Korea to promote and support such a revolution, and the national policies to train human resources in a timely fashion in preparation for such a revolution. Most ideal outcome of this panel would be to learn from each country’s congressional members their thoughts and to work together in a strong partnership ushering in and shaping the 4th Industrial Revolution.

We plan on hosting at least such congressional session every UKC to continue strengthening U.S.-Korea partnership in science, technology and entrepreneurship.

Aug. 10
Thursday
1:20 – 3:20pm

@ Conference Theater
Ballroom Level



Speaker: Tim Hwang
CEO, FiscalNote

Machine Learning, and the 21st Century Oil Rush

The data analytics and machine learning industries have exploded in the last decade, paving the way for new industries and growth. What will be the main constituent parts of the Fourth Industrial Revolution and how will they be deployed and commercialized into the world? Today’s startups and innovators are a prime example of the growing industry the opportunities it presents to disrupt industries of the past and create industries of the future.

Fine Particulate Matter Forum

FINE PARTICULATE MATTER FORUM

For tens of millions people living in urban areas, air pollution poses of serious adverse health effects such as respiratory diseases, lung cancer, heart disease, premature death, and others. In 2016 more than 80 percent of people living in urban areas were exposed to air quality levels exceeding the World Health Organization (WHO) air quality guidelines. The largest source of urban air pollution is often motor vehicles, but the contribution of other industrial combustion processes is also important. Particulate matters, volatile organic compounds and oxides of nitrogen from the combustion sources are involved with the formation of fine particulate matters and that result in air pollution.

The appearance of displeasing hazy skyline and the formation of unhealthy smog are hardly a new aspect of Korea's urban atmosphere. Despite the implementation of a range of policies and management efforts by the Korean government for decades, the reduction of fine particulate matters is still desirable. Policies and programs should be developed systematically and revised periodically to understand emission sources and characteristics comprehensively, to identify mitigation opportunities, and to track the emission reduction and air quality improvement.

As a benchmark, U.S. has successfully reduced fine particulate matters and improved air quality past 50 years starting with Clean Air Act in 1963 and subsequent legislations. Four panel members were invited from U.S. institutions and agencies to share their knowledge on primary emissions, secondary formation, air quality modeling, and policy.

Chair: Heejung Jung (University of California, Riverside)

Time	Title and Speaker
3:40 PM	Welcome and Introduction Dr. Myung-Ja Kim (KOFST)
3:45 PM	Overview and primary emissions Dr. Heejung Jung (University of California, Riverside)
4:00 PM	Secondary pollutant formation in the atmosphere Dr. Myosun Jang (University of Florida)
4:15 PM	Regional transport and long-term trends Dr. Hyun Cheol Kim (National Oceanic and Atmospheric Administration)
4:30 PM	Air pollution policy Dr. Seungju Yoon (Air Pollution Specialist, California Air Resource Board)
4:45 PM Panel discussion	Panel discussion topics include but not limited to (1) Strategies to reduce fine particulate matters and improve air quality in California; (2) PM10, PM2.5 and the story of ultrafine particles with respect to health effect; (3) Current issues on formation, properties, and impact of secondary organic aerosol; and (4) Impact of regional transport, synoptic meteorology and climate. Panelists from Korea: Kichul Lim (President of KISTEP) Sun Hwa Hahn (President of KISTI) Jin Young Kim (Principal Research Scientist, KIST) Panelists from U.S.: Heejung Jung (University of California Riverside) Myosun Jang (University of Florida) Hyun Cheol Kim (National Oceanic and Atmospheric Administration) Seungju Yoon (Air Pollution Specialist, California Air Resource Board)

Aug. 10
Thursday
3:40 – 5:40pm

@ Conference Theater
Ballroom Level

IP (Intellectual Property) Forum 2017

IP Forum 2017 will give a presentation about a new policy in technology sharing of Federal Labs and a significant role of IP in the era of the 4th Industrial Revolution. World Economic Forum defines the new era as “The possibilities of billions of people connected by mobile devices, with unprecedented processing power, storage capacity, and access to knowledge, are unlimited. And these possibilities will be multiplied by emerging technology breakthroughs in fields such as artificial intelligence, robotics, the Internet of Things, autonomous vehicles, 3-D printing, nanotechnology, biotechnology, materials science, energy storage, and quantum computing.”

As a timely manner, Brookings Institute issued a policy report early this year “Localizing the Economic Impact of Research and Development: Policy Proposals for the Trump Administration and Congress” and advised that the Federal Labs should internationally share their R&D results in an early stage of R&D so that the R&D results can be effectively utilized not only in the U.S. but also in other countries. In this regard the report of Brookings Institute has proposed a creation of IPC (International Patent Consortium) in other countries, so that the R&D Results of Federal Labs can be shared with under a certain condition.

This new idea of IPC will, once implemented, give a significant impact on the R&D and Industry in Korea because the R&D investment of US Federal Labs is about ten times as bigger as Korean one, and thus the US Federal Labs are regarded as the biggest technology sources for the world R&D and industries, and thus the technology sharing which will be a core concept in the business of the 4th Industrial Revolution will give Korean industries an opportunity entering into a new technology business as well as developing new technologies on top of the shared technologies.

We will also provide for the attendees of Korean organizations with an opportunity joining Korean IPC and have a session for signing MOUs among Federal Labs and Korean IPC.

Chairs: Paul T. Lee (President of Korea US IP Foundation)

Time	Title and Speaker
1:20 PM	Introduction to IPC (International Patent Consortium) and Discussion: The 4th Industrial Revolution and Intellectual Properties -Barry Datlof, Director of Technology Transfer, AS Army Medical Research and Materiel Command (MRMC) -Korean Delegations from Korean Institutes and Government Agencies
2:20 PM	Korean IPC Recruiting Session; MOUs among Federal Labs and Korean IPC

Aug. 10
Thursday
1:20 – 3:20pm

@ Ballroom A
 Ballroom Level

KEIT (Korea Evaluation Institute of Industrial Technology)



Korea Evaluation Institute of Industrial Technology (KEIT) is one of most active and dynamic innovation support organizations in Korea, managing R&D programs to foster innovation. The KEIT Forum is to promote the participation of Korean-American scientists and engineers in planning of Korea national R&D projects for improving R&D productivity and Global Cooperation.

Korean-American scientists and engineers in various technical areas will discuss the trends of current leading technologies in this Forum with Program Directors (PD) of KEIT to generate creative and innovative ideas for national R&D projects planning.

This Forum will be focused on 6 industrial technology areas including Medical Device, Biomedical, Nano Convergence/Metal Materials/Ceramics, Smart Electronics, Intelligent Semiconductor, and Chemical Processing.

Chair: Sung Woo Kim (North Carolina State University)

Co-Chair: Yong Beom Cho (KEIT)

**Aug. 11
Friday
11:45 – 6:00pm**

@ Ballroom A, C-F
Ballroom Level

Time	Title and Speaker
11:45 AM	Welcome and Introduction (KEIT)
11:50 AM	Lunch
12:50 PM	Welcoming Remarks Eun-Suk Seo (UKC 2017 Chair and KSEA President)
12:55 PM	Overview of Industrial Technology R&D (KEIT)
1:25 PM	Presentation of Exemplary Research Projects
1:40 PM	Breakout Sessions (Invitations Only) <ul style="list-style-type: none"> • Medical Device • Biomedical • Nano Convergence/Metal Materials/Ceramics • Smart Electronics • Intelligent Semiconductor • Chemical Processing
6:00 PM	Adjourn

KHIDI (Korea Health Industry Development Institute)



KHIDI FORUM ON PRECISION MEDICINE AND BIOMEDICAL DEVICE DEVELOPMENT

This is the second annual Forum supported by KHIDI. This Forum brings together leaders in the field of precision medicine, medical robotics, cancer technology and preclinical large animal model center in Korea and US. A major goal of this Forum is to highlight current efforts and discuss future directions in developing new drugs and medical device and technology as well as for the role of preclinical studies using non-human primate models in national animal centers.



Chair: Hanjoong Jo
(Emory University and Georgia Tech)



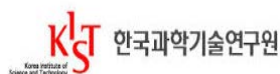
Chair: Kun Ho Yoon
(Catholic University)

Aug. 11
Friday
1:20 – 3:20pm

@ Washinton B
Ballroom Level

Time	Title and Speaker
1:20 PM	Welcoming Remarks and Introduction to KHIDI Jeong Kee Hong (KHIDI, General Director)
1:45 PM	Animal model studies in KBIO for drug discovery Byung Hwa Hyun (Director, Lab Animal Center, KBio Osong Medical Innovation Center)
2:10 PM	Precision Medicine Kun Ho Yoon (Catholic University)
2:35 PM	[Invited] Robotic systems and technologies for Surgery and Intervention Jae Soon Choi (Ulsan University)
3:00 PM	Next Generation microFluidic cell Stretcher for cancer diagnosis and drug screening Aram Chung (RPI, KSEA YIG winner)

KIST (Korea Institute of Science and Technology)



Brain Science & Biomedical Research at KIST

The forum aims to introduce KIST's research endeavors in the fields of Brain Science & Biomedical Research, and to generate ideas on how we can more closely work together in responding to challenges presented by aging societies.

We cordially invite you to attend the KIST Forum and share with us your insights and expertise.



Chair: Hyewon Lim
(Director of International Affairs
Division, KIST)



Co-Chair: Eun Gyeong Yang
(Director-General of Biomedical
Research Institute, KIST)

Aug. 10
Thursday
1:20 – 3:20pm

@ Lincoln
3rd Floor

Time	Title and Speaker
1:20 PM	Greetings (Dr. Byung Gwon Lee, President of KIST) Overview of KIST - KIST Introductory Video Clip - Presentation (Dr. Hyewon Lim, Director of International Affairs Division)
1:40 PM	Introduction to Brain & Biomedical Research at KIST (Dr. Eun Gyeong Yang, Director-General of Biomedical Research Institute)
2:00 PM	Cases of International Collaboration of KIST - Presentation 1 KIST/SUNY Stony Brook Collaborations in Neuroscience (Dr. Dennis W. Choi, Neurosciences Institute, SUNY Stony Brook) - Presentation 2 To Unveil Brain Disorders through Integration of Diversity (Dr. Hoon Ryu, Boston University School of Medicine) - Presentation 3 KIST/DFCI Collaboration to Find New Nanoparticle-based Cancer Medicine (Dr. Ju Hee Ryu, KIST-DFCI on-site Laboratory) * DFCI: Dana-Farber Cancer Institute
2:45 PM	Wrap-up
2:50 PM	Networking

KISTI (Korea Institute of Science and Technology Information)



KISTI has acted as a guide to national science and technology information that has secured national competitiveness through systematic construction of science and technology R&D infrastructure and is trusted.

We have provided tailored information analysis services to help researchers and small and medium-sized companies make timely decision-making. We have also contributed to the maximization of research efficiency by building the world's best supercomputing and research network. The purpose of this forum is to promote cooperation between KISTI and the global joint research projects between Korea and the United States and to find out the accomplishments among them and find out the technologists who will participate in international joint research projects together with KISTI in the future.



Chair: Han-Chul Park
(KISTI, Korea Institute of Science
and Technology Information)



Co-Chair: Jung-Sun Yoon
(KISTI, Korea Institute of Science
and Technology Information)

Aug. 10
Thursday
1:20 – 3:20pm

@ Jefferson
3rd Floor

Time	Title and Speaker
1:20 PM	Formational Bounds of Link Prediction for Collaboration Networks Shubhanshu Mishra (UIUC)
1:40 PM	Optimization of global high-resolution nonhydrostatic model (MPAS) and development of service tool for large data analysis: tropical cyclone forecasting and analysis using MPAS William Skamarock (MMM/NCAR)
2:00 PM	Enhance the visualization and analysis capabilities of NCAR's VAPOR package John lyne (CISL/NCAR)
2:20 PM	New Data Mining Models to Analyze Big Value Networks Data Myong Kee Jeong (Rutgers University)
2:40 PM	Developing Big Data Analytics Framework for U.S. Industry Intelligence Gene Moo Lee (University of Texas at Arlington / University of British Columbia)
3:00 PM	General Discussion (All Participants)

HYPERTUBE TECHNOLOGY



Forum on Future Rail Technology: HyperTube Technology (KRRI Global Open Innovation)

The forum, sponsored by the Korea Railroad Research Institute (KRRI), is intended to develop ideas on smart rail systems incorporating the 4th industrial revolution technology.

The revolutionary Hyperloop technology will be presented and discussed along with four presentations chosen among many applicants who submitted ideas on smart rail systems.

Chair: Jun-Seok Oh (Western Michigan University)

Aug. 10
Thursday
1:20 – 3:20pm

@ Roosevelt
3rd Floor

Time	Title and Speaker
1:20 PM	<ul style="list-style-type: none"> • Opening Remark Keun-Yul Yang (Vice President, Korea Railroad Research Institute) • Welcoming Remark Yong-Rak Kim (Vice President, KSEA) • Congratulatory Remark Moo-Young Jung (President, UNIST)
1:30 PM	Development of HyperTube (HTX) in Korea Kwansup Lee (Korea Railroad Research Institute)
1:50 PM	[Invited] TransPod Hyperloop System Sebastien Gendron (CEO, TransPod)
2:20 PM	Light-weighted Bogie Design with Topology Optimization Method JooHwan Oh (Ulsan National Institute of Science and Technology)
2:40 PM	Aerodynamic Characteristics of Hypertube System Hyeokbin Kwon (Korea National University of Transportation)
3:00 PM	Announcement of Selected Open Innovation Ideas Kwansup Lee (Korea Railroad Research Institute) List of Winners: <ul style="list-style-type: none"> • Daisik Nam, Ph.D. Candidate (University of California, Irvine, Institute of Transportation Studies) • Woong Yeol Joe, Assistant Professor (Tennessee State University, Mechanical Engineering) • Junho Lee, Ph.D. Candidate (Texas A&M University, Civil Engineering) • Seunghan Ryu, Ph.D. Candidate (University of Virginia, Civil and Environmental Engineering)

KYUNG HEE UNIVERSITY



KYUNG HEE UNIVERSITY FORUM ON SPACE RESEARCH: "TEAM SPIRIT IN SPACE"



Aug. 10
Thursday
3:40 – 5:40pm

@ Roosevelt
3rd Floor

Space science is often accompanied by large-scale space experiments and ground observations. Recent issues in space weather require collaborative team effort all over the globe for human health and safety against serious natural hazards such as solar and geomagnetic storms. Many of international collaboration are being pursued for this issue of global safety. There have been growing interests and developments in Korean space environmental studies, large part of which are associated with US space research as US has been a top leader in this subject. This forum invites leading space scientists from both countries, and provides opportunities for current and future collaboration around the globe.

Chairs:

John Lee (NASA Headquarter)

Dong-Hun Lee (Kyung Hee University)

Time	Title and Speaker
3:40 PM	NASA's Heliophysics System Observatory Update Steven Clarke (NASA)
4:00 PM	KASI-NASA Collaboration in Heliophysics KyungSuk Cho (KASI: Korea Astronomy and Space Science Institute)
4:20 PM	Frontiers in Space Physics Larry Paxton (JHU/APL: Johns Hopkins Univ/Applied Physics Lab)
4:40 PM	Coronal Heating and Solar Wind Acceleration: An Unsolved Problem in Astronomy and Astrophysics Peter H Yoon (Univ. of Maryland)
5:00 PM	ULF Waves in Planetary Magnetospheres Eun-Hwa Kim (PPPL: Princeton Plasma Physics Lab)
5:20 PM	Space Research & International Collaboration at KHU Kwangheon Park (KHU: Kyung Hee University)

LG ELECTRONICS



It is a great pleasure and honor to extend a warm invitation to all Korean Scientists and Engineers in the US to attend the LG Electronics Forum.

LG Electronics Forum is to foster an intellectual exchange among scientists and engineers from universities, the industry and other institutes for the purpose of possibly organizing follow-up activities for R&D collaboration and recruitment.

Topics to be presented in the forum: As the smartization of consumer electronics accelerates, software becomes a core competitiveness factor. Thus, we will identify issues related to software development in the consumer electronics industry and introduce efforts to solve them in LG Electronics. In addition, we will discuss the competencies that enterprise needs.

Aug.10
Thursday
3:40 – 5:40pm

@ Jefferson
3rd Floor

Time	Title and Speaker
3:40 PM	Greetings
3:45 PM	About LG
4:00 PM	Software Driven Connected Experience at LG Electronics Il-Pyung Park (Executive Vice President of LG Electronics Software Center)
5:30 PM	Q & A

NST-KIMM-KIER Energy



Towards Energy Independent Korea

National Research Council of Science & Technology (NST) along with 25 Government-funded research institutes (GRIs) under its umbrella has contributed to Korea's STI innovation through convergence and cooperation.

In light of many challenges facing Korea and the world on energy issues, NST and two leading GRIs - Korea Institute of Machinery & Materials (KIMM) and Korea Institute of Energy Research(KIER) - share energy R&D achievements and seek possibilities for Korea's energy independency in this forum.

Chairs: Dr. Jae Ho Yun (Director, New and Renewable Energy Research Div.,KIER)

Aug. 11
Friday
1:20 – 4:40pm

@ Kennedy
3rd Floor

Time	Title and Speaker
1:20 PM	Welcoming Remarks from NST, KIMM & KIER Dr. Sang Chun Lee (NST Chairman) Dr. Chunhong Park (KIMM President) Dr. Byung S. Kwak (KIER President)
1:40 PM	Introduction of NST, KIMM & KIER
2:10 PM	Compound Thin Film Solar Cell Technology at KIER Dr. Jihye Gwak (Principal Researcher & Chief, Photovoltaic Lab., New and Renewable Energy Research Div. KIER)
2:30 PM	High-efficiency SOFC-engine Hybrid System Development at KIMM Dr. Sangmin Lee (Principal Researcher & Head, Dept. of Clean Fuel & Power Generation, KIMM)
2:50 PM	Construction and Initial Operation of Jincheon Eco-Friendly Energy Town Dr. Jaehyeok Heo (Senior Researcher, Solar Thermal Convergence Lab., New and Renewable Energy Research Div., KIER)
3:20 PM	Coffee Break
3:40 PM	Renewable Energy Resource Map of Korea Dr. Hyun-goo Kim (Principal Researcher & Chief, New and Renewable Resource Center, New and Renewable Energy Research Div., KIER)
4:00 PM	Discussion
4:20 PM	Wrap-up

RISP (Rare Isotope Science Project)



PARTICLE ACCELERATOR FORUM

World-renowned accelerators are the discovery and innovation engines of scientific enterprise and are where the Korean particle accelerator communities are steadily forwarded for. It is imperative that the critical value-added role of particle accelerator facility in the areas of fundamental science and application to be sustained. In Korea, Pohang Accelerator Laboratory (PAL) and Korea Multi-purpose Accelerator Complex (KOMAC) are successfully operating and a rare isotope accelerator facility, RAON, to be commissioned on 2021, will provide the considerable values to the particle accelerator community. This forum brings the researchers from Korea and U.S. to discuss the status and future of the particle accelerators and related fields of science and technology.



Chair: Young-Kee Kim
(Chair, the Department of Physics,
The University of Chicago)



Chair: Kang Seog Lee
(President, Korean Council of High
Energy Physics, Chonnam National
University)

Aug. 10
Thursday
3:40 – 5:40pm

@ Lincoln
3rd Floor

Time	Title and Speaker
3:40 PM	Status of Pohang Accelerator Laboratory: PLS-II and PAL-XFEL Ki Bong Lee (Director of Pohang Accelerator Laboratory)
4:00 PM	The KOMAC, its Status and Plan Ky Kim (Director of KOMAC)
4:20 PM	Status of RAON Accelerator Facility Sunchan Jeong (Director of Rare Isotope Science Project (RISP), IBS)
4:40 PM	Accelerator Facilities, Technologies and Research in the U.S. Eric Colby (U.S. Department of Energy)
5:05 PM	Panel Discussion: International Collaboration on Accelerator R&D Facilitator: Kwang-Je Kim (Argonne National Laboratory and University of Chicago) Panel members: Ki Bong Lee (PAL) Ky Kim (KOMAC) Sunchan Jeong (RISP, IBS) Eric Colby (U.S. Department of Energy)



SBA (Seoul Business Agency)

SEOUL CITY FORUM

This Seoul City Forum is the 3rd annual event held at the UKC 2017. The City of Seoul and Seoul Business Agency (SBA) are interested in both gathering and sharing the state-of-the-art technologies and trends in regard to developing a sustainable and resilient city. More specifically, technology development for the realization of smart city is one of the key interests. The Seoul City Forum this year focuses on the strategies on how to utilize the 4th industrial revolution technologies, such as IoT and Artificial Intelligence (AI), to make the City of Seoul a smart city. The state-of-the-art technologies will be presented and discussed by experts coming from various disciplines, including architecture, engineering, computer science, and health sciences. Further, discussed will be the development of an open platform for internationalization of the technologies that can transform a city to a smart city.



Chair: Soolyeon Cho
(North Carolina State University)

**Aug. 11
Friday
1:20 – 3:20pm**

@ Roosevelt
3rd Floor

Time	Title and Speaker
1:20 PM	Welcome and Introduction: Buildings, Humans, Energy, & Safety Dr. Soolyeon Cho (NC State University)
1:35 PM	Proactive Route Guidance System harnessed by Big Data Analytics Dr. Brian Park (University of Virginia)
1:50 PM	Computer Science, ICT, and Smart City Dr. Jeho Park (Harvey Mudd College)
2:05 PM	Human Comfort and Environment Dr. Kwangho Lee (Hanbat National University)
2:20 PM	IoT and Transportation Dr. Changsoo Nam (NC State University)
2:35 PM	Barriers, Obstacles, and Policies in the Development of Smart City Mr. Baewon Koh (Innovative Design)
2:50 PM Panel Discussion	Panel discussion will follow based on the presentations. Attendees will have time to ask questions to the panel members.

SCIENCE DIPLOMACY

SCIENTIFIC DRIVERS OF SCIENCE DIPLOMACY ACROSS ASIA-PACIFIC REGION

The science has a long history of broad international cooperation for scientific advancement, in particular, from research exchange to large-scale research facilities. Recently, science is becoming even more critical in complex international negotiations and addressing global challenges such as climate change, infectious disease, and natural catastrophes. Such globalization of science is leading scientists from the region and across the globe naturally into international policy settings.

In the age of the accelerating science and technology, science diplomacy is increasingly becoming a central element of the public diplomacy and a soft power, and is emerging as an active area of study and policy considerations. This forum seeks to understand the nature and the role of science diplomacy for enhancing cross-border cooperative activities despite challenging political environments. In particular, the science diplomacy partnerships in and around the Asia-Pacific region are explored, which may contribute to building the capacity for sustainable science diplomacy in the region through bilateral and multilateral projects and an active engagement of long-term research platforms and scientist organizations.



Chair: Seunghwan Kim
(Pohang University of Science
and Technology (POSTECH))

Sponsors

- Asia Pacific Center for Theoretical Physics (APCTP)
- American Association for Advancement of Science (AAAS)

**Aug. 11
Friday
1:20 – 3:20pm**

@ Jefferson
3rd Floor

Time	Title and Speaker
1:20 PM	Welcome and Introduction by Chair Prof. Seunghwan Kim (Professor, Pohang University of Science and Technology (POSTECH))
1:30 PM	Science Diplomacy (R)Evolution: Building a Science Diplomacy Community Dr. Tom C. Wang (Director, Center for Science Diplomacy, American Association for the Advancement of Science (AAAS))
1:50 PM	Science Cooperation and Diplomacy Agenda in the Asia-Pacific Area Prof. Woo-Sung Jung Executive Director, Asia Pacific Center for Theoretical Physics (APCTP)
2:20 PM	Panel Session Penels: Dr. Amy Flatten (Director, International Affairs, American Physical Society (APS)) Prof. Sun-hwa Hahn (President, Korea Institute of Science and Technology Information (KISTI)) Prof. Eun-Suk Seo (Chair, UKC 2017 & President, Korean-American Scientists and Engineers Association (KSEA)) Dr. Elizabeth E. Lyons (Program Director, Office of International Science and Engineering, National Science Foundation (NSF)) <i>NB More panels can be added and announced later.</i>
3:10 PM	Closing Remarks

SMALL/MEDIUM BUSINESS (SMB) WORKSHOP

The SMB (small/medium business) workshop is organized by the KSEA SMB Committee as part of its US-Korea SMB Partnership Program. The main goal of the Program is to promote and facilitate SMB partnerships between Korea and the US. Through the partnerships, SMBs in the two countries will have an easier market entry into their counterpart country. The Program is available gratis to SMBs as a public service of KSEA.

The Workshop will begin with presentations on how to enter a foreign market. The issues addressed will be rather non-technical and more directed toward legal, economic, financial, etc. Every participant will have a chance to introduce themselves and present their wish lists. Time will be set aside to have one-to-one partnership networking. The first day's program will end with a networking dinner. The second day's morning is devoted to optional individual meetings before the end of the Workshop at noon.

Chair: H. Thomas Hahn (UCLA)

Co-Chairs: Gyeong S. Hwang (UT Austin), Kenneth K. Park (AT&T)

**Aug. 11
Friday
1:20 – 3:20pm**

@ Ballroom B
Ballroom Level

Time	Title and Speaker
1:20 PM	KSEA SMB Partnership Program H. Thomas Hahn (UCLA)
1:40 PM	Starting a Business in US Hanwook Jo (Jo & Assoc)
2:10 PM	FDA Approval Process Hae-Young Ahn (FDA)
2:30 PM	Floor Discussion
3:20 PM	Coffee Break

**Aug. 12
Saturday
8:00 – 9:40am**

@ Ballroom B
Ballroom Level

Time	Title and Speaker
8:00 AM	Floor Discussion
9:10 AM	Summary and Future Plan
9:40 AM	Adjourn

KWiSE-KOFWST Forum (Korean-American Women in Science and Engineering/Korea Federation of Women's Science & Technology Associations)



Organizer, Hee-Yong Kim

Chief, Laboratory of
Molecular Signaling,
NIAAA, NIH
President, KWiSE



Co-Organizer, Se-Moon
Park

President, KOFWST

**Aug. 11
Friday
1:20 – 3:20pm**

@ Lincoln
3rd Floor

WOMEN'S LEADERSHIP IN SCIENTIFIC INNOVATION AND COLLABORATION

Korean-American Women in Science and Engineering (KWiSE) and Korean Federation of Women's Science & Technology (KOFWST) invite you (regardless of gender) to the Women's Forum entitled "Women's Leadership in Scientific Innovation and Collaboration." It is organized to promote a spirit of pursuing scientific excellence and its application to current issues of the world through scientific and technical Innovation and collaboration. The goal is to harness the untapped leadership potential of women scientists and engineers to empower a future generation of women leaders in science and technology. It will be an interactive and engaging event to further foster peer networking and mentoring among attendees. KWiSE and KOFWST provide a platform for current and future leaders to meet in an environment where meaningful partnerships and friendships can be nurtured. It should be a great opportunity to exchange ideas, learn and inspire, and promote better leadership for a changing world.

PRESENTATIONS



KWiSE
Hee-Yong Kim, Chair
Laboratory Chief, NIH
President, KWiSE



**Career Development in Globally
Competitive Environment**
Esther Yang
Principal Partner, E&D Yang and
Associates



Lessons I've learned
Hae-Ra Han
Professor and Interim Chair,
Johns Hopkins University



Career in Innovative Business
Heayeon Lee
CEO,
Mara Nanotech New York, Inc.



Role of the KOFWST
Myeong-Hee Yu, Co-Chair
President-elect, KOFWST Korea
Principal Scientist, the Biomedical
Research Institute of KIST



**What I've learned as an executive in
industry, national labs, academia and
government**
Cherry A. Murray
Professor, Harvard University



**Korea's Major Leadership Programs
for Women in STEM Field**
Wha-Jin Han President, Women in
Science, Engineering and Technology
(WASET)



**Working as a Female Defense
Scientist in DoD**
Jin-Hee Cho
Computer Scientist,
US Army Research Laboratory

DISCUSSION PANELISTS



Mihye Kim
Professor,
Dept. of Computer
Science, Chungbuk
National Univ.



Myung-Hee Park
Senior Investigator
and Section Chief,
NIDCR, NIH



Yeon Bai
Associate Professor,
Dept. Nutrition and
Food Studies
Montclair State Univ.



Dohwan Park
Associate Professor,
Dept. of Mathematics
and Statistics,
UMBC



Myeong-Seon Lee
Professor,
Dept. of Biomedical
Science, Cheongju
University



Heykyung Lee
Professor,
Dept. of Physiological
and Brain Sciences
Johns Hopkins Univ.



Sohyoung Kim
Staff Scientist,
NCI, NIH



Yangmi Shin
Pharmacology/
toxicology
Reviewer, FDA



Hyojin Kim
Assistant Professor,
School of Architecture
and Planning
Catholic University

YGPF (Young Generation and Professional Forum)

Aug. 10
Thursday
1:20 – 1:40pm

@ Tidewater II
2nd Floor

YGPF Session: Welcoming Session

Chair: Jim Hyung Lee (GiANT Worldwide)

Co-Chairs: Benjamin Lee (INVIA Medical Imaging Solutions), Jinhwa Chun (OpenX Technologies)

Time	Title and Speaker
1:20 PM	<p>Welcoming Remarks Jim Hyung Lee (GiANT Worldwide)</p> <p>Why aren't the most educated and experienced people at their job, the most influential people in the USA? Many of us believe that if we did well in school, got into a good college, and then got a good job, we would then be set for life. In turn, we neglect social time for study time and at work, we value more of our hours on career performance and care less to participate in the office social events. Is this the formula for success? The Young Generation and Professional Forum (YGPF) addresses what may seem like a glass ceiling for the highly educated, and equips the attendees with tools to create an impactful change for our future. YGPF is helping us become more the thought leaders of today, but also the influential leaders of tomorrow. Join us as we raise the bar so you can stand tall.</p>

Aug. 10
Thursday
1:40 – 5:40pm

@ Tidewater II
2nd Floor

YGPF Session: Becoming an Influential Leader

Chair: Jim Hyung Lee (GiANT Worldwide)

Co-Chair: Clara Kim (UNC – Eshelman School of Pharmacy)

Time	Title and Speaker
1:40 PM	<p>Simple Tools to Maximize Your Influence Mike Oppendahl (Partner, GiANT Worldwide)</p> <p>Mike is passionate about promoting healthy leadership culture internally at GiANT Worldwide as well as externally in the businesses of the clients he serves. GiANT raises up Liberating Leaders who will have significant, lasting and impactful influence on the lives of those they lead in every Circle of Influence.</p>
3:40 PM	<p>Becoming an Influential Leader Workshop Mike Oppendahl (Partner, GiANT Worldwide)</p> <p>During this session, you will break out into core group sessions with professional leadership coaches to equip you with simple tools to increase and maximize your influence. Whether it be self-awareness, emotional intelligence or business/leadership intelligence, you'll receive simple visual tools and triggers to improve and change your current reality. Become self-aware, become intentional, maximize your influence and you'll be able to connect with anyone to achieve your goals.</p>

**Aug. 11
Friday
8:00 – 9:40am**

@ Tidewater II
2nd Floor

YGPF Session: Career Speed Talk I

Chair: Benjamin Lee (INVIA Medical Imaging Solutions)

Co-Chairs: Solomon Kang (Tampa Bay Water), Joonseok Lee (Google Research)

Time	Title and Speaker
C1-1	Software Engineer in Machine Perception Joonseok Lee (Google Research)
C1-2	Software Developer in Computer Science Jonathan Kim (CSX Technology)
C1-3	Software Engineer in Market Research Karl Kwon (In4mation Insights)
C1-4	Electrical Engineer in Automotive Engineering Junghee Kim (Empire Electronics)
C1-5	Hardware Engineer in Semiconductor Engineering Edward Hong (Apple Inc.)
C1-6	Boost Consultant in Clinical Laboratory / Population Health Ryan Shin (Epic Systems)
C1-7	Registered Dietitian in Nutrition / Dietetics Jisun Park (Swedish Medical Center)
C1-8	District Manager in Pharmacy Richard Oh (CVS Health)
C1-9	Co-Founder in Healthcare IT Phillip Han (Clockwise.MD)
C1-10	Small Business Owner in Food / Hospitality Annie Choi (Found Coffee FrankieLucy Bakeshop)
C1-11	Senior Clinical Content Specialist in Pharmaceutical Marketing Sahee Kim (RevHealth)

YGPF Session: Workplace Discrimination

Chair: Jinhwa Chun (OpenX Technologies)

Organizers: Younjin Lena Lim (LG Electronics), Young Eun Choi (Sierra Nevada Corporation), Hailey Bae (Amazon), Nathan Jung Byun (Absolarity)

Time	Title and Speaker
1:20 PM	Workplace Discrimination: How Much is Too Much? Marrian S. Chang (Shareholder, Ogletree Deakins) Marrian has defended employers against claims of discrimination and harassment based on disability, race, age, gender, and other protected classes. She received her J.D. from University of Southern California. Marrian also served as President of Korean American Bar Association of Southern California.
2:20 PM	Workplace Discrimination Workshop Marrian S. Chang (Shareholder, Ogletree Deakins) Have you ever witnessed a workplace discrimination? Or have you ever wondered what even defines as an act of discrimination or harassment in workplace? Using real like examples, Marrian will help define such acts and ways to prevent and defend yourself and your coworkers with legal actions and constructive feedback. Learn about what you can do to make a safe workplace for everyone.

**Aug. 11
Friday
1:20 – 3:20pm**

@ Tidewater II
2nd Floor

**Aug. 11
Friday**

3:40 – 5:40pm

@ Independence A
Independence Level

YGP Session: Poster Session

Chair: Benjamin Lee (INVIA Medical Imaging Solutions)

Co-Chairs: Solomon Kang (Tampa Bay Water), Joonseok Lee (Google Research)

Time	Title and Speaker
PT-1	Protein Hydration Study Using Dissolution DNP-NMR Jihyun Kim (Texas A&M University)
PT-2	Impact of Increased Pediatric Vancomycin Dosing on the Attainment of Therapeutic Trough Serum Concentration Seo Young Lee (Rutgers University)
PT-3	Heart Development and Regenerative Biology Chulan Kwon (Johns Hopkins)
PT-4	Science, Sports, and Social Support Jason Kim (Virginia Tech)
PT-5	Oriental Medicine Approaches to IBS Hyeran Hwang (Dongguk University Los Angeles)
PT-6	Chronic Disease Management in AV Eric Oak (High Desert Medical Group)
PT-7	So... Where are You Really From? Understanding and Responding to Racial Microaggressions and Bias Katherine Cho (UCLA Graduate School of Education and Information)
PT-8	MR-Compatible Needle Tip Force Display Based on Electroactive Polymer Amy Kyungwon Han (Stanford University)
PT-9	Mastermind is NP-Complete Jeonghyun Jem Kim (Amazon)
PT-10	Grid On // Light Off Kevin Kim (Cooper Union)
PT-11	Developing Metacognition of ESL Students: A Case Study of Using a Web-Based Speaking Assessment Tool Taewoong Kim (The University of Oklahoma)
PT-12	Effective Sorting Method for Photographs Jun Ha Park (Georgia Institute of Technology)
PT-13	Data Science in Real World Ahreum Amy Han (Underwriters Laboratories (UL) Inc.)
PT-14	Reflection on Early Experience at UARC Bumsuk Choi (JHU / APL)
PT-15	Why We Need Global Goals Eunyoung Song (Kyung Hee University)
PT-16	Unknown Life of a Beauty Pageant Jasmine Cho (University of Southern California)
PT-17	Establishment and Development of KSEA at Emory Joohee Kang (Emory University)
PT-18	The Past, Present, and Future of KSEA Seattle YG Jisun Park (Swedish Medical Center)

Aug. 12
Saturday
8:00 – 9:40am

@ Tidewater II
2nd Floor

YGPF Session: Career Speed Talk II

Chair: Benjamin Lee (INVIA Medical Imaging Solutions)

Co-Chairs: Joonseok Lee (Google Research), Solomon Kang (Tampa Bay Water)

Time	Title and Speaker
C2-1	Project Engineer in the Public Sector Solomon Kang (Tampa Bay Water)
C2-2	Jet Engine Designer in Aerospace Engineering TJ Park (GE Aviation / MIT)
C2-3	Structures Engineer in Aerospace Engineering Brian Min (Scaled Composites LLC)
C2-4	Project Engineer in Construction Management Yun Tae Cha (Taslimi Construction)
C2-5	Energy Analyst in Energy Efficiency Evaluation, Measurement, and Verification Jennifer Shen (ADM Associates)
C2-6	Account Manager in Mobile Apps Joy Lin (OpenX Technologies)
C2-7	Senior Associate in Business Valuation Soo Jung Kim (BDO USA)
C2-8	Associate Strategy Officer in Strategy / Philanthropy Rachel Lee (Bill & Melinda Gates Foundation)
C2-9	Internal Auditor in Audit Vicky Tao (Caltech)
C2-10	Accountant in Assurance Mahnhee Lee (BDO USA, LLP)
C2-11	Human Resources Operations Specialist in HR Management Christine Yo (Coca-Cola Enterprises)
C2-12	Attorney at Law in Civil Litigation and Real Estate Transactions Ahseon Park (Chae Law Firm PS)

Aug. 12
Saturday
1:20 – 3:20pm

@ Tidewater II
2nd Floor

YGPF Session: Overcoming Quarter-Life Crisis

Chair: Jim Hyung Lee (GiANT Worldwide)

Co-Chair: Clara Kim (UNC – Eshelman School of Pharmacy)

Time	Title and Speaker
1:20 PM	<p>How to Find Your Vocational Calling Paul Sohn (Founder of QARA)</p> <p>Paul Sohn is a leadership coach, best-selling author and speaker. Formerly employed by both a Fortune 50 company, Paul is the founder of QARA. QARA equips, inspires, and empowers twenty-somethings to discover their God-given identity and calling.</p>
2:20 PM	<p>Overcoming Quarter-Life Crisis Workshop Paul Sohn (Founder of QARA)</p> <p>In this session, Paul will provide practical steps and exercises to help attendees discover their true vocational calling, and give greater insights into your self-awareness. Through this hands-on workshop, you will find greater clarity around your vision and how to live a purpose-driven life. The outcome will transform your vision into the reality that is personalized for you.</p>

Aug. 12
Saturday
3:40 – 5:20pm

@ Tidewater II
2nd Floor

YGPf Session: Immigration Policy and Law

Chair: Jinhwa Chun (OpenX Technologies)

Organizers: Younjin Lena Lim (LG Electronics), Young Eun Choi (Sierra Nevada Corporation), Hailey Bae (Amazon), Nathan Jung Byun (Absolarity)

Time	Title and Speaker
3:40 PM	<p>Guide to Laws and Policies in Working in the U.S. Gilda O. Karpouzian (Attorney)</p> <p>Gilda Karpouzian is a competent attorney with over 18 years of experience in immigration and naturalization legal services. Her specialization in these areas is considered one of the top in the Maryland and D.C. areas.</p> <p>As more U.S. companies are looking to hire non-U.S. citizens and bring in talents from diverse backgrounds, it is crucial that job applicants and current employees understand immigration policy and law with clarity. With her many years of experience in immigration legal services, Gilda will share the best practices and consultations to both employees looking to work in the U.S. and entrepreneurs looking to hire non-U.S. citizens.</p>

YGPf Session: Closing Session

Chair: Jim Hyung Lee (GiANT Worldwide)

Co-Chairs: Jinhwa Chun (OpenX Technologies), Benjamin Lee (INVIA Medical Imaging Solutions)

Time	Title and Speaker
5:20 PM	<p>Awards Ceremony Jinhwa Chun (OpenX Technologies)</p>
5:30 PM	<p>Closing Remarks Jim Hyung Lee (GiANT Worldwide)</p>

2017 KSEA-KUSCO Graduate Scholarship Winners



Sungyun Cho
Weill Cornell Graduate School of
Medical Sciences



Sanghyun Hong
University of Maryland College Park



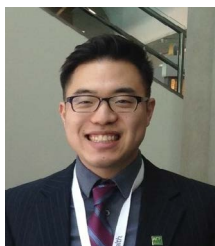
Nathanael Lee
Georgetown University



Yoonjung Yoonie Joo
Northwestern University



Sungyup Jung
The City College of New York



Peter Yu
Ohio State University



Daejin Kim
Georgia Institute of Technology



Esther Kim
Baylor College of Medicine



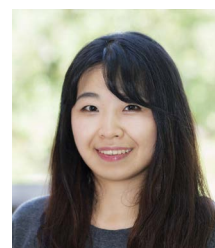
Eun-Kyeong Kim
Pennsylvania State University



Jihyun Kim
Texas A&M University



Sun Ho Ro
Rutgers University



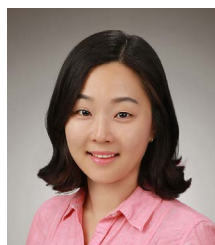
Jinhee Kim
University of Florida



Taewoong Kim
The University of Oklahoma



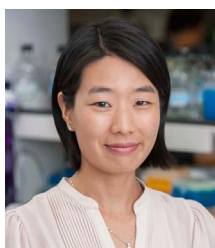
Philip Kong
Yale University



Soyeon Kum
University of Texas at Austin



Jungwoo Kim
California Institute of Technology



Kihyun Lee
Weill Cornell Medical College



Woong Hwang
Yale University



Haemin Paik
California Institute of Technology



Jason Ki
City University of New York

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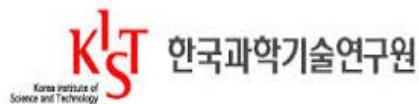


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the science and technology renaissance of Korea**

THE KOREAN FEDERATION OF SCIENCE AND TECHNOLOGY SOCIETIES

KOFST is firmly committed to enriching and supporting science and technology societies; encouraging scientists to engage with society; protecting the rights and interests of scientists; and increasing public understanding of scientific discoveries and theories to reap even greater benefits for Korea.



“Frontier of Korea -U.S. S&T Cooperation!”

The Korea-U.S. Science Cooperation Center (KUSCO)
is a non-profit organization, established in Vienna, Virginia in 1997.

KUSCO was established to accomplish two major missions: to enhance cooperative efforts in S&T between Korea and the U.S. and to support Korean-American scientists & engineers here in the United States.



KUSCO Programs

KUSCO Programs are composed of three categories; Nurturing Human Resource & Exchange, Strengthening S&T Cooperation, and Developing Infrastructure for S&T Professionals.

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BUSINESS GUIDE

Pathway of Hope
Guide for SMEs' Successful Business

business guide



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a new sense of life for the
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LG SIGNATURE

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Credit to Christopher Barret Photography


녹슬지 않는 혁신적인 철 Key는 PosMAC에 있다



부식에 10배 강한 강판, 포스맥 강판

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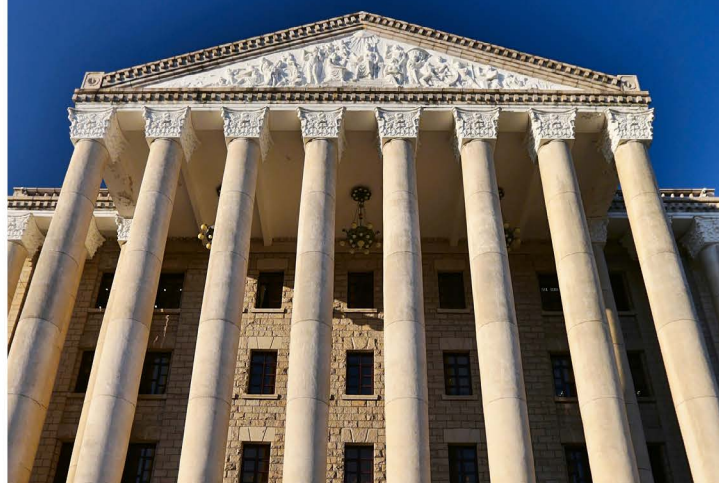
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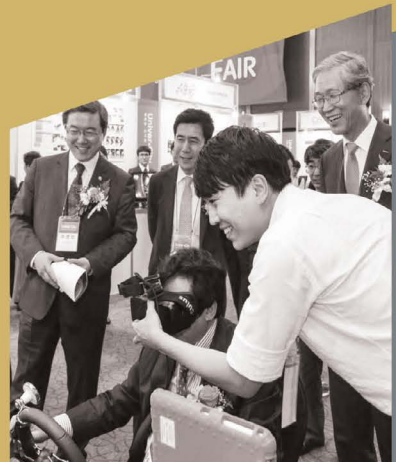
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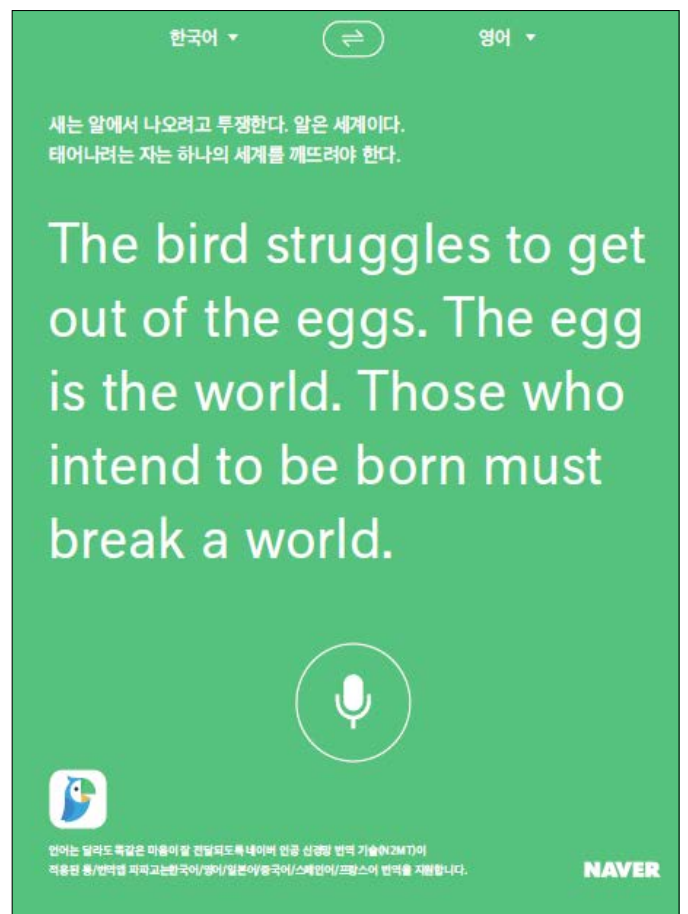
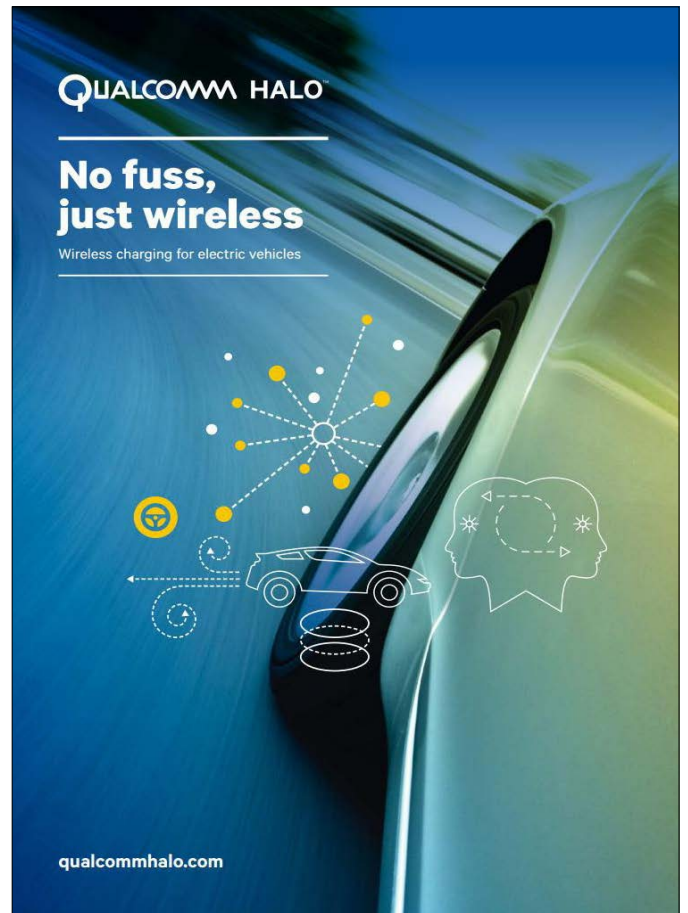
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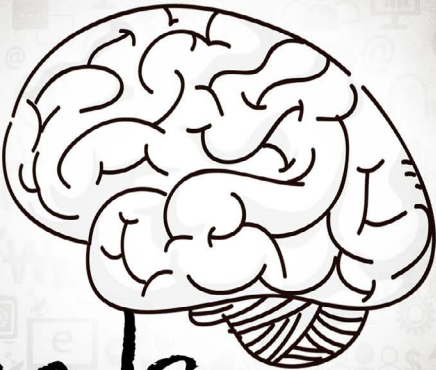
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In order to devote to foundational issues in theoretical physics at the highest levels of the Asia-Pacific regional excellence, the APCTP has operated:

- more than about 50 academic activities in and out of Korea with around 3,500 visitors per year;
- in-house research including Junior Research Groups (JRGs) in addition to Young Scientist Training Program (YST) in cooperation with the Asia-Pacific Economic Cooperation (APEC).

Science Diplomacy & Cooperation

Facilitating cooperation in the region is one of vital roles the APCTP plays. Cooperation with regional organization includes:

- taking on role as the focal point of the Asia Pacific physics community's international academic activities by installing the Association of Asia Pacific Physical Societies (AAPPS) Headquarters at the APCTP and carrying out its administrative functions;
- initiating a cooperative platform, APEC Centers Cooperation Conference, with other APEC endorsed Centers and promising to further collaborative activities by jointly issuing Pohang Declaration.

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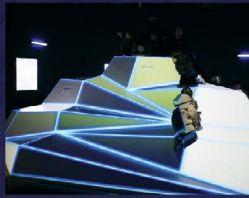
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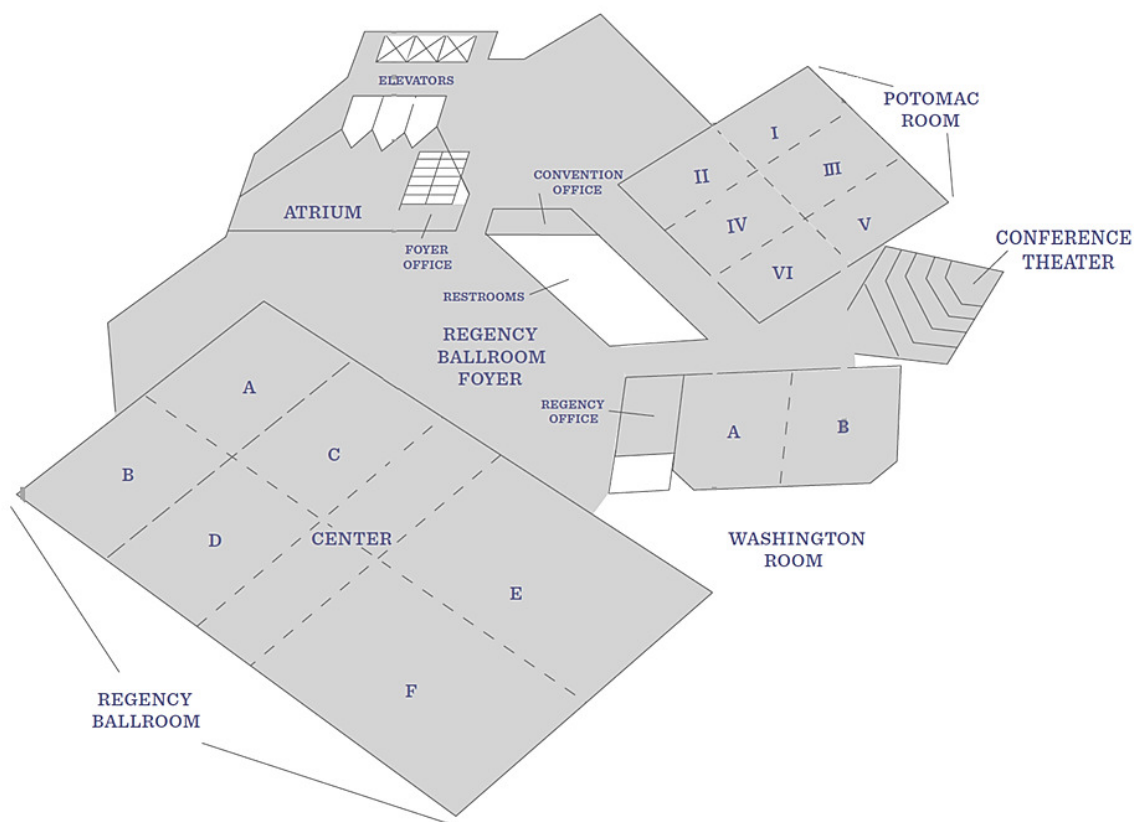


- To increase understanding of scientific technology among residents of the southern region and to promote interest in science.
- To instill and expand scientific culture in the southern region and to offer opportunities for hands-on science education.
- To form a scientific cluster of research organizations and industry-academic universities with the Daegu Technopolis.

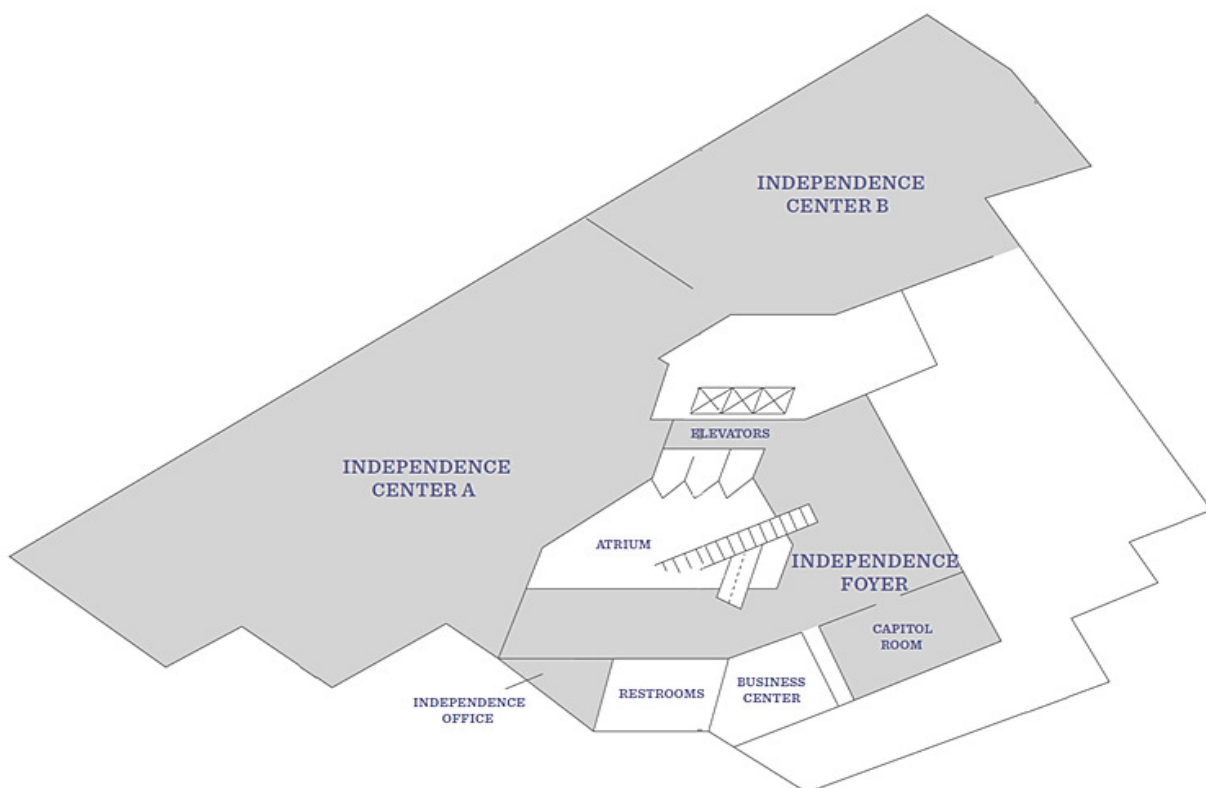


MEETING AREA MAP

BALLROOM LEVEL

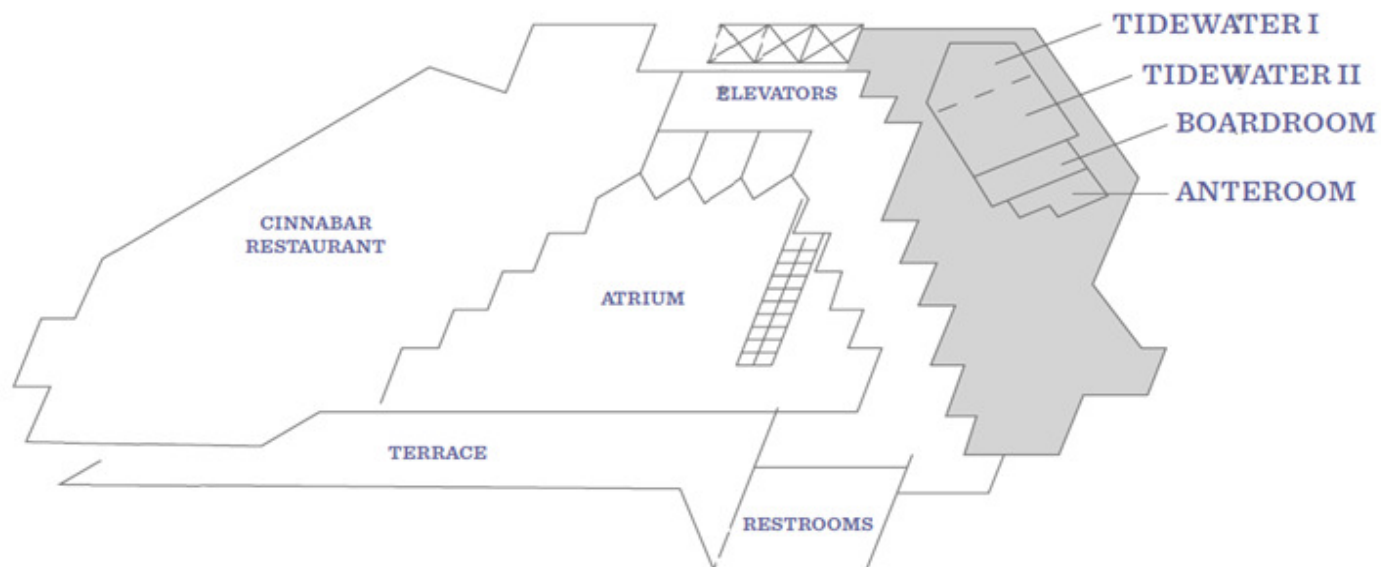


INDEPENDENCE LEVEL

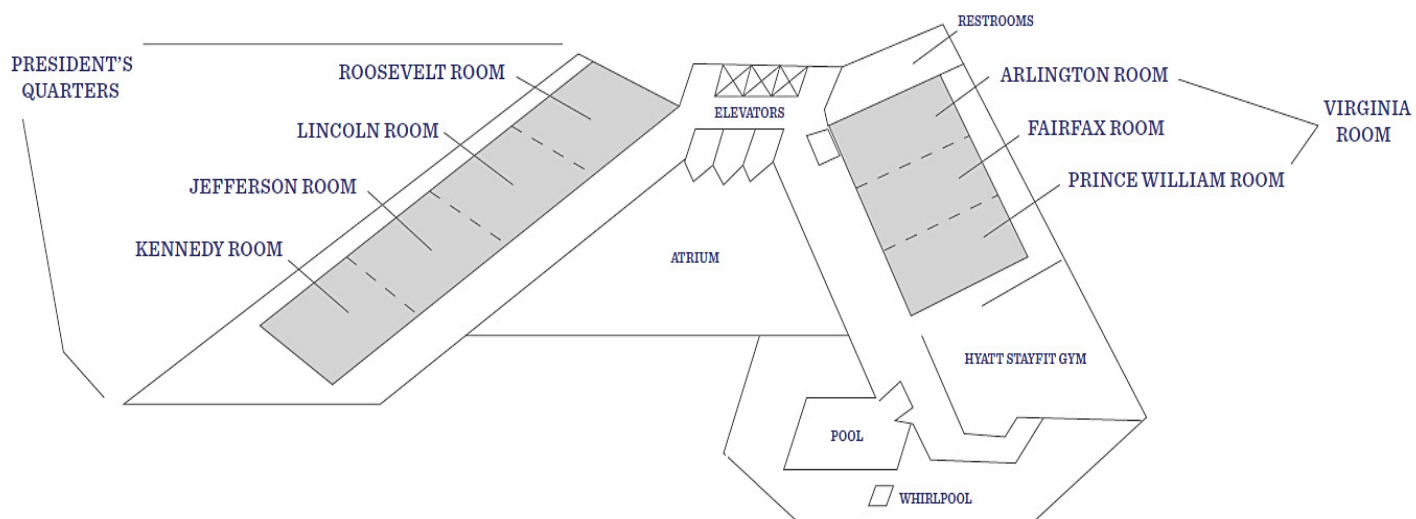


MEETING AREA MAP

SECOND LEVEL



THIRD FLOOR





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